Welcome—1926

THE NEW ERA, ushered in by 1926, is a reality. The watchword from now on is "Look Forward!" God Almighty constructed us human beings with our eyes in the front of our heads and not in the back, and undoubtedly His purpose in so placing them was that we might always look forward and never backward. Without the ability to see in front of us there would be no such thing as progress.

With this introduction let us take a glance at the past five years. They are gone. They were five years of buyers' markets; they could not be anything else because buyers, in looking forward, could see nothing but widely varying commodity prices. Naturally, they decided that the only thing to do was to make no forward commitments for commodities, fearing that future purchases might decline in price before they got possession of them.

During the past five years, therefore, excess stocks of finished merchandise were liquidated and excess stocks of raw materials were consumed. So, as we approached the beginning of 1926 it became more and more apparent that with the increased consumption of commodities and a static condition in the production of raw materials, we had reached the state where there was a practical exhaustion of raw materials for future increased consumption. Generally speaking, this obtains in all lines of merchandise, but it is more particularly acute in bread, cereals and basic pulps at this time.

The most unprecedented situation exists abroad. Sweden is reported to have sold her entire sulphate production for 1926 and the major portion of her sulphite production. Sales have been reported in the last few days of both sulphate and sulphite as far ahead as April, 1927, and nothing like this has ever obtained in the pulp markets before.

Automatically it has produced a sellers' market, because not only are prices stabilized, but the tonnage of available chemical pulp for old and new uses is inadequate. The very fact that the sales of pulp to be produced during 1926 are already consummated insures the market price for paper and the conversion of the same throughout 1926. This certainly is a welcome situation and is a striking contrast to the situation that has obtained in the last five years.

Under these conditions, therefore, it behooves every consumer of sulphate pulp to be looking far into the future. The broad-visioned manufacturer today is he who is securing possession and making sure of his supply of both pulp and paper. It is no prophecy at this writing to chronicle this situation. We are not attempting to say what is going to happen, but merely chronicling the facts that occur. It is literally impossible today to buy sulphate pulp in quantities anywhere in the world at anything like going prices, and by "going prices" we mean $65 ex dock New York, or $62 for sulphite pulp. These two figures show a basic advance of from $6 to $7 per ton over the price of last year, and an advance of 10 to 15 per cent.

Therefore, in wishing our readers a Happy New Year we do so with the conviction that if prosperous times contribute to their happiness, we certainly are to be thanked for wishing them something substantial.

Yellowstone Lake and nearby public auto camp. This and other camps in Yellowstone Park are supplied with water through Byers Pipe.

© Haynes

Insuring Your Water Supply

WATER and fuel are industry's two primary necessities; and water may even take the place of coal. Primitive mills followed the rivers; modern industry, by the use of pipe, brings the rivers to its doors.

Physical strength and rust resistance are the qualities needed in pipe to prevent its destruction and to safeguard the water supply. No pipe material combines these two qualities so economically as genuine wrought iron.

Hence the use of Byers Pipe of rust resisting wrought iron in every place where pipe is chosen by men of experience and foresight.

In the water supply lines to your mill or factory; in the steam lines to pumps, engines, evaporators; in hot water returns; in the drainage from plumbing fixtures—wherever corrosion and vibration take their toll from cheaper metal, Byers Pipe of genuine wrought iron will stand faithful guard, and return its extra cost many times over in added life, in freedom from repairs, and in insurance against expensive failures.

The Spiral Stripe on Byers Pipe now makes it easy for you to see that Byers is actually delivered and installed where specified. Byers is the only pipe so marked; hence substitution is easily prevented.

Literature on Request

A. M. BYERS COMPANY, Pittsburgh, Pa.

NEW YORK · PHILADELPHIA · BOSTON · CHICAGO
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Established 1864 *Distributors in all Jobbing Centers*

the *Spiral Stripe*
protects you against mistakes and substitution
Also look for name and your rolled in metal

BYERS PIPE

GENUINE WROUGHT IRON

Forty-Six Mills Start in Safety Contest

WHAT will probably prove to be the most gratifying experience in the history of the paper industry, the effort to operate over a six months' period without a lost time accident—or at least to reduce the number of accidents to the minimum—has been started, and forty-six mills have entered the contest.

Inspired by the record established in the former contest, held last August, many new mills have entered this and are determined to make a fine showing. The silver loving cup shown in the illustration will be awarded by THE PAPER INDUSTRY to the successful mill. The rules governing the contest and application blanks have been mailed to all of the members of the Paper and Pulp Section of the National Safety Council. Two-color special bulletin board posters on which a picture of the cup is displayed with reading matter intended to stimulate interest have also been mailed, and more will be furnished upon request.

One essential point in this contest is that in the event of two or more mills being tied at the end of six months, the contest will continue until the tie is broken. The governing factor will be the usual severity rate used for several years by the National Safety Council, who will be the referee.

Picture of the silver loving cup which will be suitably engraved and presented for the best safety record. Its overall dimensions are twelve inches wide by eighteen and one-half inches high. The Universal Safety emblem is attached to the bowl in its standard colors of green and white

The following mill members of the National Safety Council have thus far entered the Contest. The number of mills entered by each member is indicated.

The Albermarle Paper Mfg. Co., Richmond, Va.—3 mills.
Belgo Canadian Paper Co., Ltd., Shawinigan Falls, Que.—1.
Canada Paper Co., Ltd., Windsor Mills, Quebec—2 mills.
The Champion Fibre Co., Canton, No. Carolina—1 mill.
Celotex Company, Marrero, La.—1 mill.
The Chillicothe Paper Co., Chillicothe, Ohio—1 mill.
Continental Paper Co., Bogota, N. J.—1 mill.
Continental Paper & Bag Mills, New York City—1 mill.
Defiance Paper Co., Niagara Falls, N. Y.—1 mill.
De Grasse Paper Co., Pyrites, N. Y.—1 mill.
Eastern Manufacturing Co., South Brewer, Me.—2 mills.
The Falls Manufacturing Co., Oconto Falls, Wis.—1 mill.
Finch, Pruyn & Co., Inc., Glens Falls, N. Y.—1 mill.
Fort Howard Paper Co., Green Bay, Wis.—1 mill.
Hammermill Paper Co., Erie, Pa.—1 mill.
Great Western Paper Co., Ladysmith, Wis.—1 mill.
Lakeview Paper Company, Neenah, Wis.—1 mill.
Laurentide Co., Ltd., Grand Mere, Quebec—1 mill.
Lincoln Pulp and Paper Co., Ltd., Merritton, Ontario—3 mills.
Marathon Paper Mills Co., Rothschild, Wis.—1 mill.
Marinette & Menominee Paper Co., Marinette, Wis.—2 mills.
The Mead Pulp and Paper Co., Chillicothe, Ohio—2 mills.
Nekoosa-Edwards Paper Co., Port Edwards, Wis.—1 mill.
Northern Paper Mills, Green Bay, Wis.—1 mill.
Port Huron Sulphite and Paper Co., Port Huron, Mich.—1.
Spanish River Pulp and Paper Mill, Ltd., Sault Ste. Marie, Ontario—3 mills.
Spruce Falls Co., Ltd., Kapuskasing, Ontario—1 mill.
Strathmore Paper Co., Mittineague, Mass.—4 mills.
The Upson Company, Lockport, N. Y.—1 mill.
Wausau Sulphate Fibre Co., Mosinee, Wis.—1 mill.
W. Virginia Pulp and Paper Co., Mechanicsville, N. Y.—1 mill.
W. Virginia Pulp and Paper Co., Tyrone, Pa.—1 mill.
The York Haven Paper Co., York Haven, Pa.—1 mill.

Those desiring information or additional posters should address all correspondence to the National Safety Council, 108 East Ohio St., Chicago, Illinois.

Some idea of the enthusiasm displayed by those interested in the Contest can be obtained from the December News-Letter of the Paper and Pulp Section in which Secretary Ameil Umbrahan writes as follows:

"The Biggest Safety Contest of All Time will start on January first. The good to be accomplished will be increased with each added mill that enters. Bear in mind, that, while we are making safety interesting in the form of a game, yet safety organization, safety education, safety enthusiasm and safety **Habits** that will grow out of this six months' effort, all mean the saving of scores, possibly hundreds of fine fellows in our mills who might otherwise be injured, will be saved from this grief by timely co-operation. Much of the weakness of our safety effort has been in the limited appeal to Bill Jones to be careful. In this contest we shall be asking Bill to look out for the safety of Mike, and Jule and Tony. If Bill gets the spirit of this contest and realizes that his department or mill loses when Mike, Jule or Tony gets hurt, he is going to elect himself a member of the safety squad.

"And You Safety Men, Don't Forget that whether or not you win the cup, the contest will help you in making a showing in your mill. You will have from fifty to a hundred mills actually helping you on your job. Therefore, let's grasp the contest at once as a

Motors Shafts Machines

Power is applied with Timken Tapered Roller Bearings in electric motors. Power is carried on Timken Bearings in shaft hangers and pillow blocks. Power is at work in Timken-equipped machinery of every sort.

Along the whole path of production Industry economizes with Timken Bearings. They remove the drain of excess friction. Starting and running load is less. Lubrication becomes a petty item. Output is increased and improved.

Basic charges also shrink. Lighter power units and lighter belts are possible. Depreciation is halted by the faultlessly preserved position of Timken-mounted shafts, gears, and pulleys. Replacement is postponed by the extreme endurance of special Timken steel.

Throughout industry Timkens are used more and more extensively. In every type of plant Timkens can be used more and more intensively — for economical prime power, for economical power transmission, for employing power economically in every type of mechanical equipment.

THE TIMKEN ROLLER BEARING CO., *CANTON, OHIO*

TIMKEN *Tapered Roller* **BEARINGS**

chance to get over six months of good safety work in our mills."

Observations of a Traveler

THAT the paper industry is on the eve of revolutionary changes in methods and processes where the mechanics of papermaking are concerned is apparent from observations made during a recent tour of mills in New Jersey, Pennsylvania and Virginia. Early innovations were concerned with increases in the size and speed of machines, but the invention of high-pressure stock inlets and the operation of Fourdrinier machines without deckle straps or shakes marks the beginning of a tendency to depart from ancient practices. The increased speed at which the wire part of a paper machine now moves has made it necessary to secure better control of the paper in its passage through the dryer stack, and several novelties in power control are now used quite generally. Reference is made to sectional electric motor drives and compressed air and carrying ropes.

Double Fourdrinier Wires

A recent novelty is the operation of Harper-Fourdriniers with two sets of running wires, one above the other, but equipped with individual trays, and served from a common headbox. Patents are pending on an arrangement of this kind as at present operated in the mill of the Warren Manufacturing Company at Milford, N. J. No deckle straps are used on the Harper-Fourdrinier or on any of the other machines running at Milford.

But most revolutionary of all perhaps is the invention of an engineer widely known in the industry which does away with the need for a long traveling wire and so economizes space in a paper machine room. The forming part is of new and novel construction providing almost complete water removal from a continuous sheet in a limited area before it reaches the dryers which may be arranged in vertical tiers like a supercalender.

Smaller Outlets from Jordans

At No. 3 Mill of the Standard Paper Manufacturing Company, Richmond, Va., several improvements in manufacturing operations were noted, chief of them being a new arrangement of the outlet pipes on Jordan engines. In order to overcome a tendency to freeness of stock, the outlet tubes have been reduced in diameter from six inches to two inches. This appears to have the same effect as moving the gate in the Tifft process, for with a narrower outlet there is increased damming of the stock and one Jordan with this arrangement is said to be capable of doing the work of two under the old system. In addition, it is said that where four beating engines were necessary when a six-inch outlet pipe was used equal efficiency is now obtained with three beaters when smaller pipes are fitted.

It is doubtless an old trick, but it was observed in this mill that while one of the paper machines was running on a bulky paper where it was not desired to press the sheet twice on the same side, the second press roll was lifted clear, the lower roll being used as a felt carrier by driving it with a pulley on the hitch roll.

It seems to be the order of the day to make alterations in the method of delivering stock from the Jordan engine to the machine chest. At the Brown's Island mill of the Albemarle Paper Manufacturing Company in Richmond, Va., the Jordans were operated in couples, with the outlet pipes elevated and so arranged as to get results comparable with or even superior to the Tifft process. The stock is even brushed and regulated so well as to do away with the necessity of screening it before it runs on the wire. In this way 32-lb. kraft paper was seen made at good speed without the use of screens, 42 to 45 tons being the average daily production, an output which will be increased considerably when a new Horne machine that the erectors were busy on during our inspection begins to run. The new machine is designed for fast running, but also forming the sheet for strength, as the Albemarle Company makes only No. 1 kraft which must test "a point to a pound" or over. The new machine is to be equipped with every modern improvement. The wire is 132 inches wide and the couch roll is of the Millspaugh suction type, with Sandusky vacuum pumps. Over the shake rails table rolls are located for convenience in placing wires, being carried in SKF ball bearings. The breast roll is also equipped with SKF ball bearings. Other features of the new machine include a Voith patent stock inlet and distributing roll, and a flow box of rather special type.

New Machine for Albemarle

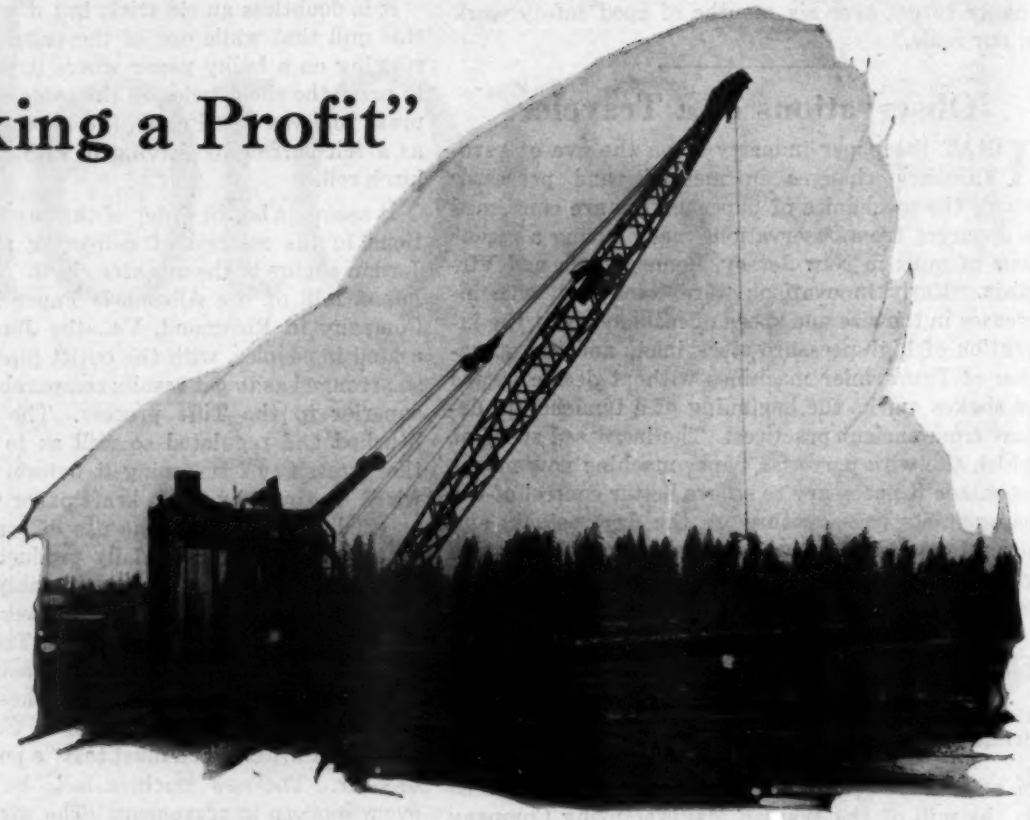
Each Dryer a Separate Unit

Meston J. Guild, superintendent of the Brown's Island mill, is a skilled mechanical engineer in addition to being an expert papermaker, and this accounts for the new mechanical developments seen at this mill. He is a native of Scotland where he got his early education and training as a papermaker at the Denny Paper Works of John Luke in Stirlingshire. He takes an active part in association affairs, being secretary of the Southeastern Division of the American Pulp and Paper Mill Superintendents' Association. Before leaving the mill, Mr. Guild called my attention to the operation of the dryers. Each dryer acts as a separate unit, having its own check valves, on the principle of the Broughton drainer, the system having been installed by Healy, Ruff Company, of St. Paul, Minn.

On a visit to the Spring Grove mill of P. H. Glatfelter Company, near York, Pa., the Wagner stationary recovery furnace was seen in operation. This furnace, the invention of C. L. Wagner, who was

(Continued on page 1594)

"Making a Profit"



In the Paper Industry with Brownhoists

Mill men talked about making profits at their yearly conference and we'll wager that when they got home, many of them studied very carefully their handling methods. Brownhoist has studied material handling methods for more than 40 years and has been able to help hundreds to handle materials economically.

Brownhoist locomotive cranes have made good in the paper industry—you'll find them logging in the northwest—handling pulp at the mills and taking care of the coal supply of many of your larger plants.

If you want to help out the profit side of your ledger, study well your handling methods—or better yet, let Brownhoist help you work it out. You are not obligated in any way, for if we can't help you we'll tell you so, frankly.

The Brown Hoisting Machinery Co., *Cleveland, Ohio*

Branch Offices: New York, Chicago, Pittsburgh, San Francisco, New Orleans

BROWNHOIST

MATERIAL HANDLING EQUIPMENT

THE PAPER INDUSTRY

REG. U. S. PAT. OFF.

Vol. 7 JANUARY, 1926 No. 10

Work of the Paper-Purchasing Committee in the New Congress

By WALDON FAWCETT

ORDINARILY the advent of a new Congress at Washington brings no change in the established routine for the purchase of paper for the needs of the Government. It is no more than coincidence, moreover, that keeping step with the organization of the 69th Congress, we beheld the inauguration of certain important modifications in the plan of paper purchase. These changes are of especial moment to the paper industry because they have long been desired and besought by the paper contractors who bid for government business.

Credit for the current revision of the working plan for paper purchase rests not more with the paper-purchasing organization, the Congressional Joint Committee on Printing, than with its subsidiary, the Committee on Paper Specifications. The latter, by the by, shows no change of personnel over that of the last Congress. As for the Joint Committee on Printing, made up of three senators and three representatives, there has been one change in directorate. Senator George Wharton Pepper of Pennsylvania succeeds Senator Capper of Kansas. The other members are Senator George H. Moses of New Hampshire, Senator Duncan U. Fletcher of Florida, Representative Edgar R. Kiess of Pennsylvania, Representative Albert Johnson of Washington, and Representative William E. Stevenson of South Carolina.

A slight speeding up of the program of paper purchase will characterize the routine in the new Congress, along with the improvements in other arrangements. Advertisements for bids are appearing during the first and second weeks in January. And it may be recalled that the last Congress put through legislation that gives the Joint Committee somewhat more latitude than it formerly had as to the choice of advertising mediums with which to reach prospective bidders. The bids for all classes of paper for the public printing and binding will be opened January 26. One week later the awards will be announced, giving the contractors ample time to arrange for deliveries to begin by March 1, 1926, which marks the beginning of the year which is to be covered by this arrangement of paper supply.

1000-Sheet Unit

The most important change in the new schedule for paper to meet Uncle Sam's requirements has to do with the unit of count and the basis of weight on which paper will be ordered. Although the specifications throughout the new schedule are based on the 500-sheet ream, the Government Printing Office will adopt the 1,000-sheet count unit and the 1,000-sheet weight basis for all paper, beginning with the 1926 contract. Substance numbers on the 1,000-sheet unit basis are double the specified ream weight. The respective size bases have not been changed for the various kinds of paper, such as 25 by 38 inches for printing papers, 17 by 22 inches for bond, ledger, writing and map papers, 24 by 36 inches for wrapping papers, 19 by 24 inches for blotting papers, etc.

Action bringing Uncle Sam into line on the 1,000-sheet unit was not unanticipated in the best-informed paper circles, since the Committee on Paper Specifications gave consideration a year ago to the recommended ream standardization of all kinds of paper on the basis of 25 by 40 inches. The committee then declared that it favors this basis when in commercial use and it is prepared to eventually "go all the way" to the standardization ideal. It may be said with accuracy that the concessions granted in the new schedule on the above cited points and others are the direct result of the contacts with the commercial

paper trade established as promptly as possible by the Specifications Committee.

Readers will, in this connection, bear in mind that it was so recently as May 24, 1924, that the Joint Committee on Printing decided that it should have an advisory adjunct in the form of a Committee on Paper Specifications, and it was not until August of that year that the new technical body was organized. At the outset the committee gave notice that it would be in session two days each week in Washington and that it would be glad to consider suggestions from paper manufacturers, made either in person or by letter. For some reasons that have never been explained, the response was disappointing to the committee. Then the specification-building body took another tack. Specifications were tentatively prepared and were submitted for comment and criticism to more than four hundred papermakers and dealers. The reaction was prompt and emphatic. A number of changes were suggested, not all of which could be given effect that first year, because a number of the advocated alterations required investigation and careful consideration on the part of the governmental body. It is, indeed, only this year that the Specifications Committee is enabled to dispose of the more important suggestions that have been made to it. Thus the Schedule of 1926 reflects, in far greater degree than the Schedule of 1925, a list of Federal paper purchases, modified in demands to conform to the best thought of the paper industry.

New Concession Regarding Quantity

From the standpoint of the paper trade, perhaps the most important concession made in the new schedule is to be found in paragraph 12, which covers "Quantity." As was the case in the old edition, the schedule specifies the quantity as nearly as can be estimated of each kind of paper that will be required for public printing and binding during the entire contract period, but the contractor is, on the face of the compact, required to furnish the quantity which may be needed, whether more or less than the estimate. To this stereotyped form there is added this year a new proviso or reservation.

Under the terms of this proviso, when the total estimated quantity contracted for under any one specification has been ordered, the contract as to additional quantities may be terminated at that time by either of the contracting parties by giving prompt notice in writing. Otherwise the contract shall, with the approval of the Joint Committee on Printing, remain in full force and effect for the remainder of the contract period. This privilege clause, which allows a paper marketer to cut short his supply operations if caught in a rising market, is in pleasant contrast to the schedule of a year ago. That old version had made partial compliance with the wishes of the paper trade, but it yet left a contractor under the necessity of supplying, if demanded, up to 25 per cent in excess of the total estimated quantity contracted for. The quantity stipulations continue the promise made to the paper industry last year that, whenever practicable, the Public Printer will order in carload lots or more.

Increased Requirements for Folding Endurance Test

The form of the new Paper Schedule follows in the main the draft devised in 1924. There has been an effort, though, to bring related matters together under general headings such as "General Requirements," "Definitions of Terms," "Quality and Inspection" and "Packing." For the information of paper sellers who are making tenders to the government for the first time, the methods of sampling and testing, which are used at the Government Printing Office to check up deliveries of paper, are set forth in some detail. The Public Printer will test for prospective bidders samples of their regular stock papers in order to make comparison with the specifications.

Progressing gradually toward a predetermined goal, Uncle Sam's specification writers have this season introduced folding endurance requirements into the specifications for 50 per cent Rag Double-coated Book, Blue U. S. M. O. Safety Writing, U. S. M. O. Writing, White and Blue and No. 1 and No. 2 Kraft. The folding endurance test was added two years ago to the specifications for a few of the bond and writing papers. The results in actual practice proved so gratifying to the paper buyer at Washington that, when it came time twelve months ago to tinker the specifications, this test was added to the requirements for all bond, ledger, map and sulphite writing papers. Now, it will be observed, Uncle Sam is proceeding to make it unanimous.

Yet another advance in the cause of clean-cut specification has just been made in the case of the thickness requirements on machine-finish book, lightweight machine-finish book, 50 per cent rag machine-finish book, supercalendered book, 50 per cent rag supercalendered book and half-tone book. The specifications, as heretofore worded, permitted wide variations in the thickness of these papers. The 1926 requirements are definite. This move on the part of the committee is as constructive as the earlier action in increasing the ash in certain lots of printing papers with a view to enabling manufacturers to improve the opacity of the paper.

New fashions are to be found for the coming season in the category of mimeograph papers. That is to say, the specifications for mimeograph papers have been materially modified. A specification for Ground Wood Mimeograph to meet the Government requirements for a low-priced mimeograph paper has been introduced and there has been a modification of the specifications for Chemical Wood Mimeograph, White and Colored, and 50 per cent Rag Mimeograph. While

the object in the instant case is simplification of the specifications, Uncle Sam is not weakening in his determination to carry specialization to the *n*th degree. It may be recalled that it was only last year that Mimeograph and Rag Mimeograph papers were listed separately in the specifications from the similar quality printing papers under which they had previously been carried.

Conformity with paper trade practice continues a tenet of policy with the Specifications Committee. In acceptance of this cult, in 1926 specifications will show the title "Onion Skin" under manifold paper changed to 50 per cent Rag White Glazed Manifold. Owing to the difficulty of determining by the examination of paper, the process by which the chemical wood pulp in it has been made, the new edition of the specifications will substitute the term "coniferous chemical wood pulp" for the sulphite pulp designation that formerly had place. This clarification of specification language is in line with what the committee had already done with respect to drying. At one time Uncle Sam's formula of paper purchase distinguished between "air" and "loft" dried paper on certain bond and ledger papers and required these papers to be "loft" dried or "pole" dried in sheets. Reworded, so as to avoid paper dried by means of internally heated dryers and applied tension, the remodeled specifications leave a contractor free to exercise his choice between "air," "loft" and "pole" dried papers.

Minimum Quantities for Purchase

Paper purchases under the new schedule are expected to embrace minimum quantities as follows: 2,540,000 pounds standard newsprint; 9,195,000 pounds machine-finish book; 90,000 pounds antique book paper; 150,000 pounds lightweight machine-finish book; 2,201,000 pounds supercalendered book; 150,000 pounds half-tone book; 290,000 coated book; 2,460,000 pounds mimeograph paper; 160,000 pounds lithograph paper; 650,000 pounds U. S. M. O. safety writing; 16,000 pounds U. S. M. O. writing; 3,000 pounds safety writing; 1,730,000 pounds writing; 355,000 pounds map; 250,000 pounds chart; 875,000 pounds manifold; 5,954,000 pounds bond; 4,000 pounds parchment deed; 918,000 pounds ledger; 5,800 pounds tissue; 360,000 pounds cover paper; 11,000 sheets cloth-lined cover; 1,425,000 pounds wrapping; 668,000 pounds manila tag board; 20,000 pounds manila cardboard; 215,000 sheets railroad board; 1,050,000 pounds bristol board; 9,000,000 pounds U. S. postal card bristol board; 79,000 pounds index bristol board; 5,000 pounds paraffin paper; 4,500 pounds gummed paper; 215,000 pounds blotting; 4,000 pounds stereotype molding paper; 25,000 pounds offset paper; 20,000 pounds oiled manila tympan; 2,000 pounds plate-wrapping paper; 6,000 pounds back-lining; 25,000 sheets press board; 500 pounds news board; 452,500 pounds chip or straw board; 100,000 pounds box board; and 775,000 pounds binders board.

With arrangements but just completed for the government's requirements of paper for 1926-27, it may appear a bit premature to be already looking forward to a polishing of specifications for the 1927-28 contracts. The Committee on Specifications makes no secret, however, of its deepening feeling as to the importance of opacity in printing papers and gives definite warning that it is proposed to concentrate on the study of this property during the coming year with the intention of incorporating in the next specification draft definite requirements for this property in paper. As has been mentioned, the government has already made one step in this direction by its increase in the ash quota for certain grades. In the "General Requirements" inserted in the specifications that have just come from the Public Printer, there is a demand that all printing paper must be fully as opaque as the standard sample. Printed opacity test sheets for use in comparing deliveries with the standard sample will be furnished to all paper manufacturers upon request.

The new invitation to paper contractors makes it apparent that Uncle Sam's paper appetite is increasing year by year, both in range and in volume. The contracts to be awarded in February will comprise 191 lots as compared to 178 lots twelve months ago and 152 lots the year before that. The total quantity estimated for the season of 1926-27 will run approximately 42,300,000 pounds as compared with 41,000,000 pounds used during the year that is now in its final quarter. Throughout the new schedule, additional sizes and weights have been added and there are a number of distinctly new classifications, including ground-wood Mimeograph paper, machine-finish lithograph printing paper, 50 per cent Rag supercalendered lithograph printing paper, 100 per cent Rag Chart paper and No. 1 Kraft paper.

The purchase of envelopes has become a part of the duties of the Joint Committee on Printing as a result of a provision contained in the Legislative Appropriation Act for 1925. This new authorization requires the Public Printer to procure, under the direction of the Joint Committee, and furnish on requisition paper and envelopes (not including envelopes printed in the course of manufacture) in common use by two or more departments, establishments or services of the government. The Paper Specifications Committee has extended its activities to cover envelopes, and the envelopes to be contracted for during the current month will include 23,200,000 wood manila, 5,750,000 Kraft, 485,000 rope manila, 5,505,000 writing, white and colored; 170,000 fine writing, white and colored; 165,000 ledger, white, and 715,000 fine bond, white.

The ambition of the Joint Committee on Printing is to gradually so perfect its system for estimating paper requirements that it will be necessary to make only an insignificant proportion of open-market purchases.

Higher Depreciation Rates and Common Sense Inventories

Vitally Important Decisions Affecting the Manufacturers

By M. P. SNOW
Public Accountant and Tax Consultant

THOUSANDS of dollars in taxes have been saved to manufacturers by several very recent decisions on depreciation by the United States Board of Tax Appeals.

Before telling about the actual content of these rulings, though, let me say that the Board of Appeals operates independently of the income tax administration, which is a part of the United States Treasury. The Board is responsible only to the President, and it is a sort of supreme tax court, passing judgment both on the income tax authorities and the taxpayers, and the Board has been making decisions at the rate of about two a day since its creation back in June of 1924.

In the findings or decisions of the Board, depreciation rates to be allowed to manufacturers on their buildings, plants and equipment are given considerable attention and study. Obviously the most important single point brought out is that the deduction taken for depreciation must be reasonable.

Of all the decisions made by the Board, however, the one of most urgent interest and value to manufacturers is a recent finding which permitted a large manufacturer to take nearly three times the regular rate of depreciation on his machinery. In this instance the taxpayer claimed that on account of the market he was forced to speed up his machinery and use a poorer grade of material in order to supply a large demand for his product. The increased vibration caused by operating at a higher speed than usual brought about a greater amount of wear and tear on the building and machinery. The poorer quality of raw material he was using increased the strain on the machinery, which likewise helped to shorten its life. Besides this, a number of his best employes left him to go into business for themselves or to engage in better-paying employment with competitors. The new men hired to replace them caused a great deal of additional wear and tear on the equipment because of their lack of experience and skill in this particular work.

Having proved all these things to the satisfaction of the Board of Appeals, the manufacturer was allowed to take a rate of depreciation almost three times as great as he took in previous years, both on his machinery and building. Of course it is logical that all these conditions did shorten the life of the property used. All that the manufacturer needed to do was to prove it to the Board.

Salt spray blown in by the wind rusted certain equipment and tracks of another manufacturer whose case was recently passed on by the Board. The plant was located right near a body of salt water. The taxpayer contended that the spray caused his tracks and equipment to become useless in a shorter time than the same property would if located inland. The Board allowed the increased rate of depreciation when satisfactory evidence showing the real conditions was presented.

Buildings and equipment located near a railroad where as many as thirty heavy trains passed by every day were claimed by a certain manufacturer to have a higher rate of depreciation because of their location. He showed that his property was subjected to the vibration caused by the heavy trains, and stated that it so affected the machinery that it could not be properly adjusted and the useful life was thus considerably shortened.

After a careful review of the facts, the Board of Appeals allowed the rates claimed by this manufacturer.

In all of the instances just mentioned, unusual rates were allowed where common sense showed that they were justified. However, manufacturers claiming higher depreciation have in a surprising number of cases presented practically no evidence to support

This is the first of a series of articles dealing with recent tax decisions, knowledge of which is worth actual dollars and cents to readers of this magazine.

While these stories will for the most part deal with decisions favorable to the taxpayer, it must be remembered that they are not to be construed in any sense as being antagonistic to Uncle Sam's tax administration. They are designed to be used as guides for the man who is not a specialist in tax matters. It is important that the taxpayer take advantage of every privilege or opportunity accorded him under the tax laws. The function of these stories is to advise him of those privileges, ignorance of which so often costs taxpayers large sums of money.

As a matter of information, the recent decision of the United States Board of Tax Appeals, in which it was held illegal to require taxpayers who paid excess profits taxes in the years 1917 to 1921 inclusive to reduce their invested capital in each year by a proportion of income taxes paid during the year, will doubtless bring large refunds to paper manufacturers. Claims should be filed at once in order to forestall the running of the Statute of Limitations against the years 1917 to '19 inclusive which for many cases are kept open under the 1924 tax law. Of course, 1920 and '21 are yet open under the five year Statute.

An arrangement for free tax and accounting counsel from the writer of this series has been made for the benefit of our readers, and this service will hold good for the entire duration of the series.

their arguments. The Board has disallowed a great many claims for higher depreciation rates because of "lack of proof." Now, a manufacturer is the one to know whether there is an unusual wear and tear on his machinery, but the testimony of an expert on buildings or machinery will carry a great deal more weight than the taxpayer's own personal opinion. If someone tried to sell a manufacturer a building and plant, he would insist in most cases on an appraisal by competent experts. Still, the Board has been virtually forced to turn down a number of cases because the only thing back of the claim was the personal opinion of one of the officers or of some employe who could not possibly qualify as an expert in such matters.

Guide for Depreciation Allowances

A very valuable guide to manufacturers in determining what the Board considers reasonable rates of depreciation on manufacturing property and equipment will be found in the following schedule, which shows rates allowed in decisions made by the board since it was created. These are listed in alphabetical order. Of course, they do not cover all manufacturing property, as the Board is young and has not yet ruled on all the assets used in the manufacturing industry. However, the table fills a long-felt want on the items which it covers and is particularly useful as a guide to proper rates.

Property—	Yearly Rate of Depreciation
Advertising signs	15%
Buildings:	
Brick and concrete	2%
Brick and concrete (1 story)	3%
Steel and frame terra cotta finish	3%
Concrete warehouse	4% & 5%
Furniture and fixtures	20%
Interior decorations	3%
Lasts	50%
Mill Plant	71%
Patterns	50%
Plant Equipment	8% & 10%
Automobiles	25%

In every one of the cases on which the above rates were allowed the individual condition of the taxpayer was taken into consideration by the Board.

One of the most frequent causes of dispute between taxpayers and the tax administration is the question of depreciation on buildings. There are such a number of facts to be taken into consideration in each case, which is seldom exactly like any other case, that to a casual observer the decision may seem inconsistent.

Right on this point, a ruling of most paramount interests and values has been made by the Board. Let me say, first, that the tax administration known variously as the "Treasury Department", the "Internal Revenue Bureau", the "Income Tax Unit" and the "Tax Bureau" has ruled consistently that buildings of the type of the modern skyscraper have a life of 70 to 100 years and depreciation should be taken on them at the rate of 1 per cent to 1½ per cent a year. The Board has generally upheld the Bureau; that is the tax administration; in such rulings. But, a recent decision by the Board regarding depreciation on two sixteen-story buildings in the Chicago Loop district a rate of 2½ per cent was allowed.

In other words, the Board held that these buildings would only last forty years, which is an unusually low life for such property, and this was done in the face of the contention of the tax unit that they should last at least seventy years. The taxpayer won his contention by proving that the history of buildings in the Chicago Loop District since 1871, the year of the great Chicago fire, showed that very few buildings remained after 35 years from the date of construction. He showed, also, that buildings which had not reached the final stage of physical depreciation or exhaustion had become obsolete from an economic standpoint and were replaced by larger, higher and more modern structures. This condition has been peculiar to the rapidly-growing Chicago Loop district and this particular taxpayer was clever enough to take advantage of this peculiarity, thus realizing a very large saving of taxes.

At this point, let me urge that if there is anything peculiar or unusual about the conditions surrounding the wear and tear on your buildings, plant or machinery, take advantage of it. So long as you can submit reasonable proof to support a claim for increased depreciation you will find Uncle Sam willing to meet you half way, to relieve you of any burdens you obviously should not carry.

Two Methods of Figuring Depreciation

Now there are several different methods of taking depreciation. Some use what is known as the "declining balance" basis. For example, if a manufacturer decides that a certain machine will last ten years he will take 10 per cent as depreciation the first year, deduct the amount from the cost on the books, then take 10 per cent on the remaining amount of the cost the next year, deduct it and so on through the rest of the life of the asset.

Those manufacturers, however, who carry a reserve for depreciation on their books take 10 per cent each year on the original cost of the machine. In the first case—the "declining balance" method, it will take about seventeen years to write the machine off the books by depreciation at the rate used. However, in the second instance, the plan requires just ten years to recover the cost of the asset. Therefore, those who figure depreciation by the first method are really taking only about 6 per cent a year instead of the 10 per cent they usually think they are deducting. A larger tax results, because

they are deducting less than they are entitled to in figuring their tax liability.

Favorable Decision on Inventories

Just a word now about inventories. Manufacturers have as many problems as any taxpayers, if not more. Depreciation is by far the most troublesome. But, inventories have also been the cause of innumerable arguments between the government and the manufacturer. There is not room in this article to discuss inventories at length. However, it is well to say in passing that the Board of Tax Appeals has been entirely fair in its rulings on inventories, and, in one very recent case overruled the income tax administration and saved a concern several thousand dollars in additional taxes. The concern in this case had taken inventory on the basis of the market value of its goods, which value was a great deal below cost. The income tax authorities turned down the taxpayer's method of computing inventory on the ground that the reduction below cost was arbitrary. But, the Board sustained the concern and overruled the Internal Revenue Bureau when the taxpayer proved that his figures were based on actual sales made about the time the inventory was taken.

In closing, let me call the attention of manufacturers to one other thing.

Perhaps the greatest development since the inception of the tax laws, so far as the public is concerned, is the decision by the United States Supreme Court, and later by the United States Board of Tax Appeals, also, that where there is a doubt regarding the assessment of a tax, the doubt should always be decided in favor of the taxpayer and against the government. In your contact with the tax authorities, this is a valuable thing to remember.

Truth Has Many Aspects

The Philadelphia Quartz Co., Philadelphia, have commented on the recent condemnation of silicate of soda for greaseproofing by the research bureau of the Folding Box Manufacturers' Association.

They set up the point that in research, it is sometimes easy to be misleading without even intending to be.

"Silicated chip board has proven in millions of boxes that it has a satisfactory grease resistance for many uses," they state. "The protection it imparts is not absolute, but it is substantial and very economical. Coating of hard rubber or other substances costing a hundred times as much as silicate may yet be cheaper than tinplate and as able to withstand exposure to grease, but until their use has been fully developed and their economy proven, silicate can not be swept aside with a wave of the hand. We might add that it makes a difference what silicate is used and how it is applied."

Tinting Paper by Dipping and Calender Staining

THE processes of dyeing paper by dipping and calender staining are principally characterized by the fact that the color is applied to the paper after the sheet has been formed. The dyestuff is, as a rule, dissolved in water and the paper to be stained is brought in touch with the solution in a way that the strength of the sheet will not be impaired to any appreciable extent.

As noted in a recent issue of Dyestuffs, the dipping process is primarily used for coloring tissue paper where brilliant and deep shades are required. Very bright and heavy shades can be obtained which cannot very well be duplicated by beater dyeing.

Calender staining is principally carried out at the same time the paper is made in the machine. From the last dryer roll, the sheet is carried through a calender where the color is applied.

Both these methods of dyeing will produce brilliant and deep shades at comparatively low cost. The stain obtained, however, does not resist water and is in this respect inferior to a beater dyed shade.

Naturally the colors to be used for these processes must be as easily soluble as possible. It is also important that they keep in solution for some time without any alteration in their properties.

It is a well known fact that acid dyes possess such properties and this group of dyes, has, therefore, principally been adopted for this kind of paper coloring. Colors such as National acid Orange YP; National croceine scarlet MOOP; National Resorcin brown RP; National tartrazine P; National Nigrosine 128; National fast acid green BP; National acid violet 4BNP; National Buffalo black NBRP.

The foregoing colors are said to be the most important for the trade when dyeing is carried out by dipping or calender staining. These colors are all very easily soluble and once dissolved are also easy to hold in solution for quite some time. They will give very uniform stains and produce shades of great brilliancy.

Of the basic dyes only very few are used. Violet shades of great brightness are sometimes secured with National methyl violet BBP powder, and bright delicate pink shades may be produced with National rhodamine BP and National safranine AP. If basic dyes are used, great care must be taken in dissolving them.

Dyes of the direct group, as a rule do not come into consideration for these methods of coloring since the shades produced are not sufficiently brilliant.

As previously stated, the acid dyes are chiefly used for dipping and calender staining. The group of dyes possesses rather good fastness to light, in addition to the properties mentioned above which gives them preference over the basic dyes.

Box Board Paper Machine Speed Table

By Lynn L. Armantrout

THE extensive educational work that has been given to the paper industry of recent years is showing some highly commendable results in many ways. For one thing, the machine men are no longer the disinterested workmen of former years, but are now alert to the possibilities of their jobs and take a lively interest in getting the highest possible production of a good grade paper from the machines in their charge.

Providing a means of keeping those concerned constantly posted regarding the accurate output of their machine at its present speed, or furnishing them with a table of production at various speeds for the grades of paper made, so they can know at a glance what speed must be maintained for the desired output, results in a more gratifying record of production. It has been found that the positive knowledge provided by the table as used in conjunction with the speed indicator, gives the machine tender a confidence and interest in his machine performance that is often lacking when guess work rules are used and accurate figuring is left to the officials.

Paper Machine Speed—Production Table

Machine Speed in Feet Per Minute—112 Inch Trim

PAPER "NUMBER" Sheets 26"x38" in Bundle of 50 Lbs.	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210
	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour	Bdls. Per Hour
50	97	114	130	146	162	178	194	210	227	244	260	275	292	308	325	340
55	88	102	117	132	146	161	176	190	205	220	235	249	264	278	293	307
60	80	93	107	120	133	146	160	173	186	200	214	227	240	254	267	280
65	73	86	98	110	122	134	147	159	171	184	196	208	220	232	245	257
70	69	81	92.5	104	115	127	138	150	162	173	184	196	207.5	220	231	242
75	65	76	87	96	109	120	131	142	153	164	174	186	196	207	218	229
80	61	71	81.5	91.5	102	112	122	132	142	152	163	173	183	193	203	214
85	57	67	76	85.5	95	105	114	124	133	143	152	162	172	181	190	200

Table No. 1

The method given below for figuring the output of a box board machine in bundles (50 lbs.), when the speed of the machine is known, is, I believe, one of the simplest devised, and is easily figured by anyone without the mathematical complications usually encountered in such rules.

The term "Number" as used hereafter denotes the number of sheets 26" x 38" required to make a bundle of 50 pounds and can be found in terms of caliper by referring to the Box Board Manufacturers Association Gauge list No. 2.

Method of Figuring Output

Machine speed (FPM) x 60 equals lineal feet of paper per hour.

The number of paper, divided by the square inches of paper produced per foot of machine travel (trim width in inches x 12 inches) equals Sheet Constant.

Machine speed (FPM), divided by Sheet Constant equals the output of machine in bundles per hour.

Bundles per hour x 1150 equals pounds of paper per day of 23 hours.

For instance, we want to know the output of a machine making a Number 50 paper, and going 90 feet per minute. Machine Trim 112".

90 x 60 equals 5400 feet per hour, machine speed in feet per hour.

112" x 12" equals 1344 square inches paper per foot of machine.

Number 50 divided by 1344 equals 37, the Sheet Constant. The Sheet Constant is the basis of these calculations and forms a short means of arriving at the result, but is not strictly proper from a mathematical viewpoint. When dividing Number 50 by 1344 square inches, it is necessary to carry the number figure out three places. The resultant number, 37 in this case, must be treated as a whole number in subsequent calculations.

5400 divided by 37 equals 146 bundles of paper per hour output. 146 x 1150 equals 167,900 pounds, or 83.9 tons of paper per day of 23 hours.

The above figures in bundles per hour worked out in table form are quite a useful and valuable help to the machine room when framed and fastened on the paper machine right over or near the speed indicator. The writer made such a table in paper grades from Number 40 to 120 and speed range of 60 feet per minute to 275 feet per minute, and it was gladly put on the machine by the superintendent, where it has been for several years and has proven very helpful. While the speed range of my table is large, it would not be necessary to put this much work into a table for the average plant.

In working out the table, the sheet constant was first worked out for the range of Numbers, and as

they never vary for that machine it was ready for use in all calculations of speed. Once the constant was known, all that was necessary in each result was to divide the machine speed by the sheet constant, to give bundles per hour. In this way the chart was quickly worked out as presented in Table 1.

This table is probably used more often in the reverse manner than that described above. Instead of wanting to find the output at a given speed, it is wanted to know how fast the machine must go for a given output. By finding the number of bundles output desired, as shown in the central figures on a horizontal line with the Number, the speed necessary for that production will be found at the top of vertical column over the bundles per hour.

Figuring Speed for Desired Output

The machine-hours required on an order vitally affects the price a manufacturer is to ask for his product. The production facilities of the mill must be determined exactly before it is known what can safely be bid on a job to allow a safe profit. It is also equally important at times to know as near as possible whether or not the machine can be run fast enough to put out an order in the time specified, allowing 23 hours a day steady running time.

The following rule based on the same sheet constant table as that given above for figuring the machine output in bundles per hour, will be a short cut to calculating the machine speed required for a given production in pounds.

Suppose, for example, we want to make 85 tons of Number 50 paper, figuring on a 23 hour day, and it is not known how fast the machine must average to make this amount.

The Number is the same as given in the example above for figuring the output in bundles per hour. Therefore, the sheet constant is the same, and will be used in this case also.

One hundred and seventy thousand pounds of paper required in 23 hours, divided by 69,000, the minutes in 23 hours times 50, gives the pounds of paper required per minute, which is 2.5.

The sheet constant, 37, multiplied by the pounds per minute equals 92.5 which is the speed the machine will have to average for 23 hours to give the production of 85 tons.

If the table of machine speed and production in bundles per hour is handy, it is a simple matter to find the required speed by its use. For example:

170,000 pounds paper required in 23 hours, divided by 1150, gives us 148 bundles per hour required.

On the table, find 148 bundles per hour on a horizontal line from Number 50 and at the top of the vertical line will be found 90 feet per minute.

In the case just given, the bundles per hour corresponding with Number 50 happens to be 146 and the speed shown in table is 90, but the table giving speed of machine in 10 foot graduations is close enough for all practical purposes, and as in this example, a slight adaptation of figures shows the desired speed.

Maintaining a Set Daily Production

Some plants have a set schedule of daily tonnage and try for this amount regardless of the weight of paper made, figuring perhaps that the increased speed possible with lighter papers will make up the tonnage to a total of the heavier paper. This works out all right where the machine is kept up to the increased speed necessary with the light paper.

In a plant of this kind, Table 2 is very good to post in the machine room. This shows the graduated chart giving the machine speeds necessary for 75 tons a day, in accordance with the Number of paper being made.

TABLE OF MACHINE SPEED FOR 75 TON PRODUCTION IN 23 HOURS

Machine Trim, 112 inches

NUMBER 50 Paper requires	80.4 feet per minute
NUMBER 55 Paper requires	89.1 feet per minute
NUMBER 60 Paper requires	97.8 feet per minute
NUMBER 65 Paper requires	106.5 feet per minute
NUMBER 70 Paper requires	113 feet per minute
NUMBER 75 Paper requires	119.6 feet per minute
NUMBER 80 Paper requires	128.3 feet per minute
NUMBER 85 Paper requires	137 feet per minute

Table No. 2

The chart may be calculated for any daily tonnage, using the same Number 50 as before, but figure for 75 tons in place of 85.

Each case can be figured as in the example shown for finding the speed required for a given output, or by using the table as shown in the same case.

75 tons per day is 150,000 pounds per 23 hours. 150,000 divided by 1150 equals 130.4 bundles required per hour.

Find the speed corresponding to the Number, and bundles per hour, which in this case is 80 feet per minute, and the whole table is made up in a few minutes by simply taking the same procedure with every Number. The output in bundles per hour is known, and also the Number to be figured. With the example given, the speed difference for a given output is found to be about 10 feet per minute for a difference of five points in Numbers with the heavier papers. As the grade of paper lightens, of course, the speed ratio increases much more.

In giving the above rules and examples, an effort has been made to condense the actual amount of terms and calculations involved to a minimum. Thus showing that figuring the output of a paper machine is simple for those who are interested in the subject, whether machine men or executives.

A man at work is worth two in a hospital, says the National Safety Council.

Foreman Training in the Paper Industry

Part IV—State Foreman Training Programs

By J. K. NOVINS

Author of "A Training Program for the Factory Foreman," "Foreman Training in Practice," "Manual of Practical Training for the Railroad Foreman," etc.

Foreman Training Facilities in Ohio

DURING the course of his investigation on foreman training methods, the writer spent several months visiting various industrial centers in Ohio. In this middle-western state, the writer found a highly organized system of state supervision. In Ohio, foreman training has been recognized as a definite state function and no efforts are spared to co-operate with individual employers to help train groups of factory foremen.

The writer talked to all those actively engaged in foreman training work in the state, and completed his investigation by visiting plants, talking to executives and foremen, and by attending typical foremen conferences in paper plants. The investigation took the writer to industrial centers in Columbus, Dayton, Cincinnati, Hamilton, and Cleveland, etc.

The foreman training in the state is efficiently organized, under the dual control of the State Board for Vocational Education and the Ohio State University. However, the work is under the direct supervision of Mr. E. L. Heusch, State Supervisor of Trades and Industries, with offices in Columbus, the state capital.

Mr. Heusch supervises the state agencies for foreman training, and secures the co-operation of other local independent educational agencies. Aside from that, he carries on propaganda to interest employers of the state in the foreman training facilities afforded them by the state. This he accomplishes by carrying on a publicity campaign in the form of printed literature distributed to employers, and by means of addresses before gatherings of employers and foremen. For instance, recently Mr. Heusch addressed a meeting of over a thousand foremen from Ohio industries at which the subject of foreman training was discussed.

Recently, Mr. Heusch sent out two bulletins to interested employers in the state. In one bulletin, he enumerated the reasons for foreman training and the methods by which the state serves the employers in this respect. The state arranges to conduct a series of initial conferences for the foremen in the plant, conducted by a state official, and then offers to advise the management on the development of a permanent plant foreman training program.

"The first plan suggested," Mr. Heusch states in the bulletin, "provides for the training of a group of executives to conduct conferences on various phases of departmental duties in their own plants. Method and content comprise the major objectives in the training of this group. Opportunity for observation of method is made possible by attending the conference of plant foremen. The State Board for Vocational Education co-operating with the Federal Board for Vocational Education has material available to the members of industrial organizations who adopt this plan.

"Another plan suggested for the continuation of the work includes additional contacts with groups of foremen organized within the plant. These contacts revive the sense of responsibility toward carrying out the principles of progressive foremanship."

This series is a manual on the subject of foreman training, and as such is replete with valuable suggestions for the installation of a foreman training course in the paper industry.

Part Four contains seven chapters, of which the two herewith are the second and third. "The Michigan Experiment in Foreman Training" and "How Foreman Training Is Promoted in Eastern States" will appear in the next issue.

The author of this series is available to answer any inquiries regarding any phase of foreman training on which the reader might wish to be enlightened.

Training Instructor-Foremen

The training of executives for leadership of foremen training work in individual plants is carried on chiefly by Professor D. J. MacDonald, Head of the Department of Vocational Education of the Ohio State University. For instance, last year, at the request of a group of employers in Columbus, Professor MacDonald inaugurated an evening class for representatives of fourteen local plants, to instruct them in the art of conducting foremen conferences in their respective plants. Formerly, Professor MacDonald was connected with the University of Cincinnati, where he conducted a similar course for representatives of twenty-two Cincinnati plants, and at other times he has trained other groups for the work.

"During the past five years," Professor MacDonald said to the writer, "I have been engaged in promoting two types of work, that is, so far as foremen are concerned. First, training leaders for foremanship conferences; second, training instructor foremen. During this period of time I conducted two classes for

training leaders in Cincinnati and one in Columbus."

Methods of Training Instructors

Professor MacDonald has developed a great deal of material used in training leaders of foremen's classes and conferences, to which material, through the courtesy of Professor MacDonald, the writer has had access in the preparation of this manual. For the present, we will confine ourselves to a brief outline of the methods for training instructors as employed by Professor MacDonald. These methods he recently enumerated as follows:

1—The personnel of the group consists at first of executives who rank higher than foremen in their respective plants; later, foremen themselves are asked for.

2—By means of charts, analyses, diagrams, etc., the executives are led to see not only what is demanded of the average foreman, but also what he must be in order that he may measure up to the demands. A chart of possible foreman attributes is used in this connection.

3—The kind of help foremen need is emphasized by means of dozens of everyday problems which have been handed in by foremen from other plants.

4—The practical problems referred to in "3," and others added by members of the group, are organized for class or conference use.

5—The leader organizes units of material and demonstrates in a series of sessions, with the help of foremen who have come in, how foreman training may be carried on by plant executives.

6—One or more of the executive group volunteers to take charge of the foreman group for a period. The leader helps him get ready for this work.

7—Following each demonstration lesson or conference, the meeting is thrown open for general discussion as to why certain things were done or left undone.

8—Follow-up is carried on in plants where progressive members of the group have started foreman training work.

Sending Instructors into Factory

Under Professor MacDonald are four assistants who devote their entire time to conducting foremen conferences in individual plants in Ohio—Professor MacDonald expects to have seven men for this work in due time. The state is divided into instruction territories. Thus, Mr. T. E. Jones leads foremen conferences in plants in the northern part of the state, and he maintains headquarters in Cleveland. Mr. Jones, by the way, is on the staff of the Cleveland Board of Education, and was loaned for the work to the state department. He is an expert on foreman training, and his fame is so nation-wide that recently he was borrowed by the University of Southern California to conduct special work with a class of foremen during the summer months.

Mr. R. W. Jenkins devotes his efforts to plants in Hamilton, Ohio, and thereabouts. He has specialized in paper plants. His headquarters are in Hamilton, but he conducts conferences in plants in Middletown, Franklin, West Carrollton, etc. Among the plants where Mr. Jenkins has conducted conferences of foremen are, The Champion Coated Paper Company in Hamilton; Gardner and Harvey Company in Middletown, and the Miami Envelope Company, and West

A conference of Champion Coated Paper Company foremen, led by Mr. R. W. Jenkins, of the foreman training staff of the Ohio State Board for Vocational Education and Ohio State University. Standing near the door is Dr. Louis H. Frechtling, director of the Department of Industrial Relations of the Champion Coated Paper Company. Note the intimate manner in which the foremen are grouped for discussion of their problems.

Carrollton Parchment Company, both in West Carrollton.

In the Cincinnati territory, the work is done by Mr. L. A. Flagler, a practical engineer. The fourth man has just been added to the staff.

Foreman Training in Paper Center

In other articles, the writer treats in detail the methods employed by Mr. Jenkins in the paper plants, but for the present we will confine ourselves to a mere outline of his activities. For the present let it be said that his work has aroused national interest among the executives of paper and paper products plants. In commenting on Mr. Jenkins' work, Mr. E. T. Gardner, president of the Gardner & Harvey Company, recently said: "We can frankly say that each man has come out of the meetings with a broader conception of his functions as a foreman. We heartily recommend the course in Foreman Training to other organizations, and express our appreciation to the several agents and agencies involved in demonstrating to us the value of such training."

Dr. Louis H. Frechtling, head of the Department of Industrial Relations of the Champion Coated Paper Company, recently stated: "We are more than pleased with the results of the Foremen's Training Conference Course. We feel that much has been accomplished of value, both to our foremen as individuals and to our organization as a whole."

In his work, Mr. Jenkins has had the full-fledged co-operation of the Miami Valley Paper Makers' Association, at meetings of which his work has been highly praised. In co-operation with this organization, Mr. Jenkins has developed three types of instruction: foreman instructor training, evening school work, and correspondence school work.

At first Mr. Jenkins put on typical foremen's conferences according to the Federal Board for Vocational Education procedure. He then developed a more lengthy course consisting of weekly conferences stretched out during an entire season. After this he developed a course in economics as applied to the paper industry. Mr. Jenkins, in addition to the material furnished by the Federal Board, has made use of the texts gotten up by the Technical Association of Pulp and Paper Industry.

The course in economics was especially developed by Mr. Jenkins. At first he found it a very difficult task, for he could hardly find a text book on the subject that would appeal to the foremen, and, furthermore, Mr. Jenkins is strongly of the belief that the average foreman will not take the trouble to read a text book. Mr. Jenkins set out to find a representative text, and he then planned his conference lessons with the text as a nucleus, applying the principles to conditions in the paper industry.

"The evening school work," Mr. Jenkins said, "was developed at the suggestion of the foremen-training group of the Gardner and Harvey plant. The text used for this work was Volume I of the series of books put out by the Technical Association of Paper Makers. Lesson sheets were prepared from the text and used in class work. These sheets were carried into the mills by the students, and often foremen and workmen would help the students with the problems. The classes met twice per week, with alternate weeks on account of shift work."

Some Results Achieved

In other articles are taken up the methods developed in these plants, but for the present let us see how the work has resulted in better production and co-operation of the foremen. The important advantages of the foremen conferences are enumerated by Mr. Jenkins:

1—Better co-operation between (a) management and foremen, (b) foreman and foreman, (c) foremen and men.

2—Reduces labor turnover.

3—Helps foremen to feel that they are a part of the whole plant.

4—Gives a foreman some notion as to how far he can go.

5—Gives foremen a chance to talk things over.

6—Low production costs.

7—Better understanding of plant policies and management.

8—Develops ability to think analytically.

9—Increases interest on the job.

10—It helps the foreman handle his men better.

11—It helps the foreman to instruct his new men.

Other State Educational Agencies

In addition there are other educational agencies in the state engaged in foreman training work, either directly or indirectly. In Cleveland, foreman training work is a recognized function of the Cleveland Board of Education. It is in charge of Mr. L. A. Briggs. This department co-operates in every way with the state and federal educational departments. In Akron, the work is carried on through Mr. Ralph H. Waterhouse. In other centers the work is conducted as follows:

Alliance, through Mr. Don. B. Shultz.

Canton, through Mr. C. E. Littell of the McKinley High School.

Cincinnati, through Mr. J. F. Arundel, of the Vocational Department of the Board of Education.

Columbus, through Mr. H. M. Appleman, Vocational Department, City Board of Education.

Coshocton, through Mr. Charles A. Eckert.

Dayton, through Mr. C. G. Sharkey, Vocational Department, Stivers High School.

Findlay, through Mr. P. B. Hartman.

Fremont, through Mr. J. T. Lambdin.

Kent, through Mr. R. F. Daniel.

Lima, through Mr. R. D. Chamberlain, South High School.

Lorain, through Mr. C. S. Smith.

Mansfield, through Mr. E. C. Kerr, Mansfield High School.

Marion, through Mr. L. H. Rieker.

Middletown, through Mr. A. J. Beatty.

North Canton, through R. D. Heine.

Norwalk, through Mr. H. E. Franz.

Piqua, through Mr. R. M. Franz.

Portsmouth, through Mr. C. H. Brechner.

Sidney, through Mr. T. L. Presser.

Springfield, through Mr. Homer Stevens.

Toledo, through Mr. J. M. Sterling.

Youngstown, through Mr. R. L. Troescher.

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Foreman Training Program in Wisconsin

DURING the past three years, a definite foreman training program has been developed in Wisconsin through the Extension Division of the University of Wisconsin. Special courses have been developed to serve the industries in various industrial centers throughout the state. At the present time classes for foremen are being conducted at Janesville and at Appleton. Among the industries thus served at Appleton by the University of Wis-

consin foreman training service have been, The Tuttle Press, manufacturers of paper towels and paper bottle caps, and the following other paper plants: Fox River Paper Company, Interlake Pulp and Paper Company, Kimberly-Clark Company, Thilmany Pulp and Paper Company. In fact, the foremen from the paper industries formed about fifty percent of those taking the training at Appleton.

The foreman training course was conducted at Appleton by Mr. J. J. Davis, an efficiency engineer attached to the Paine Lumber Company at Oshkosh.

"There were in this course," Mr. Chester Allen, District Representative of the Extension Division of the University of Wisconsin at Oshkosh said, "about thirty men all of whom completed the course satisfactorily, and were very much interested throughout. We have had a number of very favorable comments from the men themselves, and one of them from the superintendent of one of the mills which was received yesterday is interesting. He says, 'In my opinion the course in Foremanship Training makes better foremen, and my contact with those foremen who have taken the course has shown me that they are practicing what they learned and are better men in their jobs because of it.'

"The conferences were conducted by Mr. Davis in a very informal fashion and were remarkably successful in getting a very wide participation."

The course was of ten weeks' duration, the foremen maintaining during the course, an attendance record better than 85%, according to Mr. Allen.

"The aim of the course," Mr. Allen said, "was to give practical foremen a general knowledge of management problems so that they could handle their own jobs more effectively and intelligently. The lessons covered such subjects as handling men, industrial relations, employment management, selecting men, planning activities, keeping up quality, job instruction, safety, wage problems, and increasing production. The students said its value could not be estimated in dollars.

"This plan of co-operation between the Vocational School and the University Extension Division is one which makes high grade specialized courses available to the citizens of Appleton which otherwise could not be conducted by the Vocational School. It has supplied in this course valuable text material to each student, a competent, practically trained instructor, correction of the lessons by a member of the University faculty and an efficient organizing service from the University Extension Division."

Wide Representation from Industry

The courses conducted by Mr. G. L. Gardiner at Janesville, under the supervision of the University Extension Division, have been attended by foremen from a variety of industries. Mr. Gardiner is the Employment Manager of a large manufacturing concern in Wisconsin, and recently prepared a course of training of foremen, which, at this writing, is being put in shape for publication in two volumes by a large publishing house. It is this material that Mr. Gardiner has been using with his foremen groups.

"I have just completed writing and re-writing text material for two courses in foremanship," Mr. Gardiner said recently. "A preliminary course dealing with pure foremanship problems, and an advanced foremanship course dealing more with managerial functions which a foreman should have some knowledge of if he hopes to rise above the grade of a foreman. So far we have been concentrating our efforts on the preliminary course. Next winter we will follow up with the advanced course.

"We handle the course either by correspondence or by group discussions. The latter is very much more worth while. I have conducted most of our courses myself, and it is my conclusion that best results are obtained with a group of about twenty foremen, preferably from one organization. The instructor should not pose as an expert, but should act rather as a chairman of the discussions.

"Our preliminary course consists of ten assignments. Each assignment is covered by one evening of discussion. These meetings are held weekly. The topics covered are as follows: Handling Men; Industrial Goodwill; Employment Management; Selecting Men for Jobs; Planning the Work; Keeping Quality High; Breaking in the New Man; A Safe Place to Work; Wage Problems and Advantages of Increased Productivity.

Prefers Outside Instructor

"Seventy-five per cent of the success of foremanship training," continued Mr. Gardiner, "depends upon the manner in which the class meetings are conducted. We are satisfied that we have as good text material as any we have been able to scan. Our problem lies now in getting capable men to instruct. We have concluded that foremanship training will rarely, if ever, be successful when conducted by an executive of the organization of which the foremen are a part. 'A prophet is never known in his own land.'

"Our results have been gratifying beyond our expectations. At the close of our course with the Parker Pen Company foremen, of whom there were thirty in the class, the manager made the statement that it was the best thing that ever struck their shop organization. The reaction that we have had from managements everywhere is that their foremen take time to use their best judgment on their problems after taking the course. They do not jump to conclusions so readily. They think their problems through."

Through the courtesy of the Dean of the University Extension Division, the writer secured a brief outline of the courses conducted both by Mr. Gardiner and Mr. Davis. This outline the writer will pre-

sent in this article, for the benefit of paper plant executives.

The aims of the course of ten meetings, as indicated above, are as follows:

1. To give foremen a general knowledge of management problems so that they can handle their own jobs more intelligently.

2. To help foremen to handle their men more efficiently, wisely, and tactfully to obtain better results in production.

3. To present methods of handling wage problems, production problems, and organization problems.

4. To train ambitious men in the ranks for foremanship jobs.

5. To train foremen for better jobs.

Outline of Courses

The outline of the courses follows:

Topic One, Handling Men: Can you handle men? The secret of successful foremanship lies in getting the goodwill and co-operation of men. The foreman is a key man in industry in the handling of the men in the ranks. Every workman presents a human problem. The ability to handle men is essential for successful foremanship.

Topic Two, Industrial Relations of Management and Men: Management and men have many things in common. They need to understand each other better. Growth of industries has separated management and men and we need to restore contact. Foremen have the largest responsibility in representing the point of view of management to the men, and in turn bringing the workers' point of view to the management.

Topic Three, Employment Management: Employment management is a new profession in industry. Employers now feel that the job of hiring men requires a specialist. Foremen are very close to the employment problem. Their success largely depends upon the kind of men they have to work with. Whether a foreman hires his own men or an employment department hires them, he should understand the principles of employment management.

Topic Four, Selecting Men for Jobs: Do not put a square peg in a round hole. The efficiency of any man largely depends upon his being fitted to the right job. Does the job require a young or old man, quick or slow, educated or unschooled, heavy or light? These are questions which have to be answered when the selection of men for jobs is made. There are a great many tricks to learn about this important function.

Topic Five, Planning Industrial Activities: Have a plan and work it. Plan your work. Go by carefully laid plans, not by guess. Have a system that will aid you in your work. Know today what you intend to do tomorrow. It lightens the foreman's load to have his work planned in advance. Your department will be a "mad house" unless the activities are planned ahead of time.

Keeping Up Quality

Topic Six, Keeping Quality Up—Inspection: The quality of a product must be kept high if it is to meet competition successfully. Foremen are as responsible for quality as they are for quantity production. Inspection is an aid to foremen in checking up defects in material and workmanship before products leave the plant. The foreman can help to advertise the product by holding his department to quality standards.

Topic Seven, Job Instruction: Give a man a chance to get a fair start on a job. The first few days are the most important days for a new man. Every new man is entitled to careful attention. The foreman can make or spoil a green man by the start he gives him. Job instruction means better earnings for workers, better results in production for the company, and credit to the foreman. The foreman is responsible.

Topic Eight, Making the Plant Safe: Who pays for accidents? The employer, the employee and his family, and the public all pay for accidents. How can accidents be reduced? No one can help more than the foreman who takes an interest in accident prevention. The foreman is the best safety man. He should be always careful than always crippled.

Topic Nine, The Wage Problem: Industry's greatest problem! Wages are the very center of industrial relations. How can a wage increase be used to best advantage to secure an employee's loyalty, best efforts, and co-operation? What are wages? What factors govern wages? How about wage disputes? The foreman stands nearest the worker on the wage problem. He applies the company's policies to the workers in the ranks.

Topic Ten, Advantages of Increased Production: Increased industrial efficiency means lower costs. Lower costs mean lower selling prices. Lower selling prices mean larger production and still lower production costs. The improvement in workmen's standards of living can be traced in large part to improved methods of economical production. Today a worker can accomplish more with modern equipment and methods than twenty men could a hundred years ago. The workingman of today also enjoys more luxuries than kings did two hundred years ago. The foreman is expected to cut the corners in his department. If we are to continue to produce more products and comforts within the reach of the average man's pocket book, we must continue to increase the industrial efficiency per man per hour.

Course Constantly Revised

"The course," said Mr. F. W. Shockley, assistant to the Dean of the University Extension Division,

"which is still in mimeographed form, has been revised through experience in using it for class work and with minor revisions will soon be put in final form. It consists of twenty chapters or assignments and is organized for use whether in class work or correspondence study."

In commenting upon the method of conducting the course, which is indicated by the above outline, the Extension Division said: "There is nothing 'highbrow' about the way this course is conducted. A group of foremen get together around a table. The meeting is thrown open to discussion upon the particular topic which is up for consideration. Everyone contributes his ideas. Everyone hears the other fellow's point of view on each question. The instructor does not assume to be an expert on all foremen's problems. He steers the discussion. Problems of individual foremen are welcomed.

"If one foreman could be given the combined brains of all the foremen in the group he would be the wisest foreman in America. We do not expect that any one foreman will absorb that much in this course, but we do know from experience in this field that no man can join the discussion of a group of foremen on all of these important foremanship topics without increasing his store of knowledge tremendously."

The Old Handmade Process

DR. HUGH P. BAKER, executive secretary of the American Paper and Pulp Association, is a book lover and he likes to share his finds of rare old books with his friends. One of his recent acquisitions is a duodecimo volume entitled "The Natural History of Remarkable Trees, Shrubs, and Plants," which bears no author's name, but was printed in Dublin, Ireland, by John Jones, 40, s. Gt. George's-St., in 1819, 106 years ago. Like all old volumes, it is distinguished by beautiful typography and a remarkable series of woodcuts illustrating vegetable growths, trees, etc., that were rare and unusual at the time the book was published.

The interesting thing about the book to readers of THE PAPER INDUSTRY is found in a description of the flax plant on page 61 where the manufacture of paper from linen is described in the following quaint fashion:

"When Linen is so much worn as to be no longer fit for clothing; when it has passed from one poor person to another, till at length it has dropped in tatters, it by no means ceases to be useful. Every good housewife should have a bag expressly for keeping old rags in; they will be bought from her, by the rag gatherer, who sells them again at the paper mills, when they are converted into that beautiful and valuable substance called paper.

"The paper maker gives them first to women to sort, according to their different degrees of fineness, who also carefully cut out the seams, which they throw into a basket for other purposes; they then put them into the dusting engine, a large, circular wire sieve, from which they receive some degree of cleaning.

"The rags are next conveyed into a large trough, or cistern, into which a stream of clear spring water is constantly flowing. In this cistern, is placed a cylinder about two feet long, set thickly round with rows of iron spikes, standing as near as they can to one another without touching: at the botton of the trough are corresponding rows of spikes. The cylinder is made to whirl round with inconceivable rapidity, and thus these iron teeth tear the cloth in every possible direction; till, by the assistance of the water, which continually flows through the cistern, it is reduced to a fine pulp; and by the same process all its impurities are cleansed away, and it is restored to its original whiteness. This process takes about six hours.

"This fine pulp they next put into a copper of warm water. It is already the substance of paper, and the form must now be given to it: for this purpose, they use a mould made of wire, strong one way, and crossed with finer. This mould they just dip horizontally into the copper, and take it out again. It has a little wooden frame on the edge, by means of which it retains as much of the pulp as is wanted for the thickness of a sheet, and the superfluity runs off through the interstices of the wires.

"Another workman receives it, opens the frame and turns out the thin sheet (which has now shape, but not consistence) upon soft felt placed upon the ground ready to receive it: on that are placed another piece of felt, and then another sheet of paper, and so on till they have made a pile of forty or fifty. They are then pressed with a large screw-press, which, forcibly squeezing the water out, immediately gives them consistence.

"Much, however, still remains to be done. The felts are removed, and the paper dexterously taken up with an instrument in the form of a T, three sheets at a time, and hung on lines to dry. After hanging a week or ten days, any knots or roughness it may still have, are carefully picked off and it is then sized.

"Size is a kind of glue, made from the skins of animals, and without the application of this substance, the paper would not bear ink, but would run and blot, as is the case on common red paper. The sheets are then hung up to dry, and when dry, taken to the finishing-room, where they are examined again, pressed in dry presses (which give them their gloss and smoothness), counted into reams, and sent to the stationer; from whom we have it, after he has again folded it, and cut the edges. The whole process of making paper takes about three weeks."

Pointers for the Engineer

By W. F. SCHAPHORST, M. E.

The Power Show

PAPER mill engineers and those officials who have anything at all to do with power plant equipment should not miss an opportunity to visit the annual Power Show in New York City. It is growing larger and better every year. This year it occupied three entire floors in Grand Central Palace and I am informed that next year four floors will be used.

So many devices were exhibited that are of interest to paper mill engineers that it would require too many pages of THE PAPER INDUSTRY to attempt to tell all about them here. To study every exhibit carefully would require every day of the week. Demonstrations and exhibits varied all the way from belt lacing and gaskets to automatic combustion control and a crankless Diesel engine. Next year, if in the vicinity of New York, by all means take in the show. I have been told that over 120,000 visitors attended the show this year.

High Class Demonstrators.—In conversing about the Power Show with a retired official of one of the largest concerns in America he made these interesting remarks: "I was impressed most by the high type of men to be found in nearly every booth. I met presidents, vice-presidents, sales managers, general managers, branch managers, and some factory superintendents. Usually in order to call at a plant one must first take a long railroad or other trip; then the plant must be found, via taxi or trolley; then one is met by a hostile information clerk; then a boy is summoned to lead the way to the person sought—and very often that person is 'out of town.' At the Power Show all of these annoyances are eliminated; one can usually step right up and talk to a man who knows what he is talking about. The Power Show is a time saver for purchasers and users and is a tremendously important educational factor."

Worn-Out Substitute Belting

A NUMBER of times I have seen it stated in print that substitute belting is of no practical value after it is worn out, that it cannot be used for soles of shoes, for straps, for remaking into narrower belts, etc., as readily as can leather belting.

While I believe it is true that the "scrap value" of leather belting is greater than that of substitute belting, still every once in a while I come across instances where worn-out substitute belting is used to profitable advantage.

An instance was recently brought to my attention where an old rubber belt was utilized for packing a pump plunger. The belt was cut into uniform strips of a thickness to fit nicely into the stuffing box. The lengths were such that each would wind around the piston rod once. It wasn't a **small** job either. The rod was 7 inches in diameter, hence each piece was made slightly over 22 inches long.

I have also seen wide belting, made of solid woven cotton, that had served its purpose on pulleys, cut up into short lengths and doing duty as mats on floors. Such mats are good for deadening sound, and they make good insulators to keep heat in or out, serving the same purpose as a carpet. Several lengths piled one on top of the other make good pads or shock absorbers upon which delicate heavy objects may be dropped without danger of bruising and with less danger to the floor.

A substitute belt that is so badly worn that it must be thrown away and that cannot be used for some purpose other than power transmission would be very badly worn indeed.

Buying Inefficient Machinery

IT IS not uncommon for some buyers to complain about their machines being inefficient, after it is too late. They say that they were "stung." I know of a case of this kind in which the machine used was guaranteed to render a certain performance, but from the start it failed to do so. The guarantee was good for one year only. Both the manufacturer and user were to blame, I contend, because the machine certainly wasn't "as represented," and the buyer was too lenient. The manufacturer insisted that after a time when the machine was properly "worn in," it would come up to the prescribed mark. But it never did, and the owner is still waiting. The year has passed and the guarantee is no longer active. The owner can't hold the manufacturer any more.

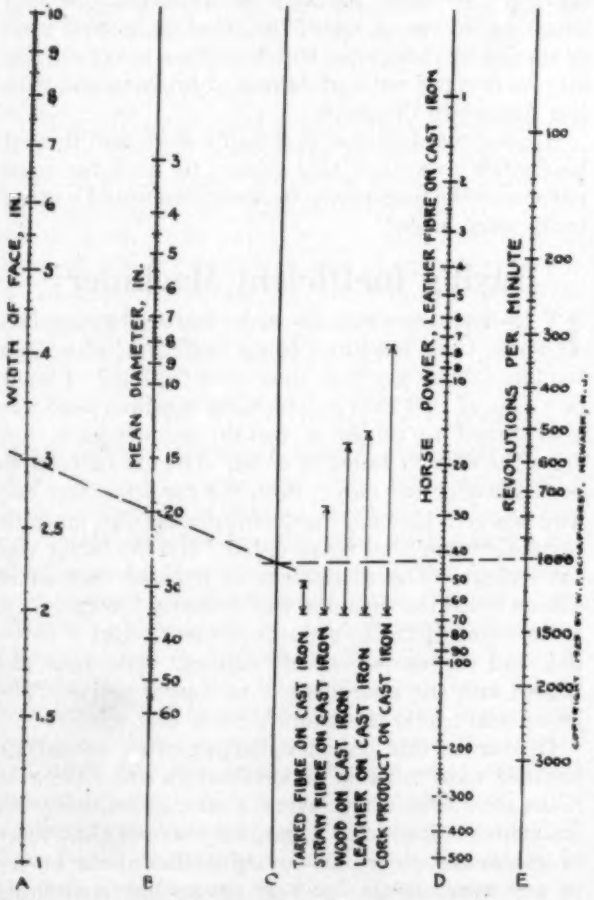
Of course, this does not happen often nowadays, because most reliable manufacturers are willing to make good even after several years, guarantee or no guarantee. The point I want to make is that there is seldom any excuse for buying inefficient machinery of any kind, unless one sets out to buy something cheap. One can hardly expect a cheap product to be efficient. Before buying expensive machinery, though, one has several ways of determining beforehand whether or not that machinery will be efficient. Manufacturers are generally willing to make tests before the machine leaves the factory, and at these tests the buyer is allowed to have as many representatives as he wishes. After such tests are made to the full satisfaction of experts, there is seldom any chance that the machines will go wrong or fall below guaranteed performance. It often pays to employ competent experts for the selection of machinery. Lastly, if the machine doesn't fulfill the

guarantee, don't be afraid to ask the manufacturer to make good. Present day manufacturers are anxious to make good, because they know that any case of poor or unsatisfactory performance means a "black eye" for the manufacturer.

Useful Friction Transmission Chart

BY MEANS of this chart one is enabled to almost instantly find the horsepower that can be transmitted by a leather fibre friction wheel on a cast iron wheel. Only two simple operations are required.

For example, if the width of the friction face is three inches, the mean diameter of the friction wheel



20 inches, and if the wheel makes 1,000 revolutions per minute, what horsepower will be transmitted by a leather fibre wheel on a cast iron wheel?

The two dotted lines drawn across the chart show how it is solved. First, run a straight line through the 3, Column A, and the 20, Column B, and locate the intersection in Column C. Then from that point of intersection run over to the 1,000, Column E, and the intersection with Column D gives the answer as 42.8 horsepower.

Between Columns C and D are shown other combinations such as tarred fibre on cast iron, straw fibre on cast iron, etc. But when such combinations are used, measure upward from the intersection with Column D a distance indicated by the arrows and the top point thus located in Column D gives the horse power that will be transmitted, using the combination mentioned. Thus, for example, tarred fibre on cast iron will transmit 33 horsepower, straw fibre on cast iron 18 horsepower, wood on cast iron 10.8 horsepower, leather on cast iron 9.6 horsepower, and a cork composition on cast iron, 4.8 horsepower. These figures are readily checked on the chart by measuring upward the distances indicated.

The term "mean diameter" is used in Column B so that in case the wheels are bevels or mitres the mid-diameter should be used rather than either of the extremes.

This chart is based on the following rule which may be used for checking the chart, or vice versa:

Saving Niagara Falls

NOW that a plan to save Niagara Falls seems to be actively under way, it may be well to call to mind the ideas of the late Dr. Charles P. Steinmetz. He stated that all of the water of Niagara Falls should be utilized for developing power. In that way Niagara would be dry most of the time. Although the dry Niagara would not be as much of a spectacle as the wet, still, according to his way of looking at it we should have the additional pleasure of seeing it dry. Then on special occasions the water could be allowed to flow over the falls—a sight that would be well worth seeing. Nobody living has ever seen that great volume of water suddenly let loose and allowed to flow over the falls. Dr. Steinmetz contended that it is extravagant and foolish to allow the water to go to waste as at present so long as it is possible to "both have our cake and eat it too."

Everything Recorded

THE best paper mill power plants of today as well as the large central power stations, are having nearly everything of importance recorded permanently by means of recording instruments.

What was the temperature of our chimney gas yesterday before and after each soot cleaning?

What effect did the soot cleaning operation have on the draft? On the CO_2? On the superheat temperature?

What was the average CO_2 during last month and the corresponding month last year?

How much steam passed through pipe "C" last week?

Have furnace temperature conditions been improved during the last year?

How does the boiler feed water regulator act during peak loads? During valley loads?

A few years ago the standard answer to questions like that was, "I don't know." Today any one of them can be answered by the chief engineer of a modern

power plant without leaving his room. He can tell you the exact conditions **right now** as regards any one of the above items. It is a good, healthful, economical state of affairs, worthy of adopting to a reasonable extent by the smaller plants. In most instances recording instruments soon pay for themselves. Nearly **any** instrument that makes for greater fuel saving soon pays for itself.

Automatic Combustion Control

WE ARE arriving closer and closer to the point where guess work in the boiler room, manual labor, and much mental labor will be eliminated. At the recent Power Show, several concerns demonstrated devices that automatically keep the pressure where it belongs by speeding the stoker up or down, regulating the damper, balancing the draft, and keeping the CO_2 at the right point. One of these devices is electrical and the others are mechanical. Some of them are in actual operation in very large power stations and it is claimed that they are doing their work well.

Like mechanical boiler feed regulation, damper regulation, temperature regulation, pressure regulation, and most other modern automatic regulation, automatic combustion control will give us far better regulation than human regulation can possibly give. Mechanical devices don't forget—do not become fatigued—are willing to work day and night, do not go on strike, and can be made more sensitive to temperature and pressure changes than can the human being.

Automatic combustion control is a modern necessity both from the standpoint of fuel conservation and of labor saving. We haven't enough laborers in this country today and besides fuel is becoming so costly (due to scarcity of labor) that engineers can no longer afford to be bothered with inefficient hand labor. Engineers should have opportunity to **think** and handle power plant problems scientifically. Automatic combustion control gives them that opportunity.

When We Invest

BUYING something we "need" is **not** an investment. It is a necessity. Buying food for the purpose of keeping alive is a necessity. Buying a pair of shoes is usually a necessity.

Investment is the **difference** in cost between the lowest price at which the necessity can be obtained and the price actually paid.

For example, let us assume that you need a steam boiler and you write around to boiler manufacturers for prices. You get prices ranging all the way from, say, $8,000 to $12,000.

If you decide on the cheapest you are not really "investing" at all because you **must** spend at least the minimum. But if you decide on a boiler costing $10,000 you are investing $2,000. Or, if you decide on a machine costing $11,000 you are investing $3,000. And so on.

The "additional" money is the investment upon which you depend for better returns than would be obtained from the cheapest boiler. Thus if the $12,000 boiler will save $4,000 worth of fuel in one year, if it will occupy less space, and if it will last at least as long as the $8,000 boiler, it is evident that the $4,000 "investment" will prove well worth while.

Buyers who are real investors are never afraid to pay a higher price for a thing that is better.

Modern Power Plant Data

FOR handling coal, a capacity of 3.5 tons per hour per 1,000 turbine horse power is usually ample. "Turbine horse power" is used here to avoid confusion with boiler horse power.

For pumping water into the boilers the feed pumps should be capable of .048 gal. per min. per turbine horse power.

Forced draft fans should be allowed .0127 horse power per turbine horse power and induced draft fans, about 0.016 horse power.

Economizer heating surface: 0.85 sq. ft. per turbine horse power.

Superheater surface: 0.16 sq. ft. per turbine horse power.

Boiler heating surface: Two sq. ft. per turbine horse power.

Combustion chamber: One cu. ft. per turbine horse power.

Forcing Boilers Profitably

THE belief exists amongst many users of boilers that it is uneconomical as well as inefficient to "force" them.

That is true of boilers that are not kept clean and in good operating condition. Dirty boilers are serious wasters at all times.

Boilers that are free from soot and scale, and under which combustion is efficiently maintained, show surprisingly high efficiencies even under high overload.

Large boilers having heating surfaces between 20,000 and 30,000 square feet commonly show operating efficiencies as high 82 per cent when running at normal load. When operated at 200 to 300 per cent of rating the efficiency sometimes drops only 2 per cent. Usually the drop is from 4 to 6 per cent. Surely a drop of 2, 4 or 6 per cent is not much. It has been found more economical in most large power stations to operate boilers at high overload, even though the efficiency is not the maximum, than to pay for and install three times as many boilers for the mere sake of maintaining maximum efficiency all the time. By installing fewer boilers, forcing them during peak periods, and then operating them at normal capacity and highest efficiency most of the time, each dollar invested is made to produce greatest returns.

Editorial Comment

By WILLIAM SIBLEY

Why Railroad Mergers Should Be Permitted

ASIDE from giving an official picture of the railroad situation, the 39th Annual Report of the Interstate Commerce Commission carries two sections of particular significance; one dealing with consolidation, the other with freight traffic.

The queston of consolidations has already claimed the serious attention of the entire country. It is not a new subject, but because the present situation involves combinations of national importance and makes necessary far-reaching changes in policies, public attention has been more closely directed to the question than ever before.

Few people realize the enormous cost of railroad operation. Equally few appreciate the costly duplication of effort and equipment that competition makes necessary. In like measure, it is only vaguely understood that in railroading, competition with its resulting duplication of equipment and expense, does nothing to better service or reduce rates. The report of the I. C. C. ably points out that the merging of competing lines would result in not so much the enhancement of stock values, as in the lowering of rates and the increasing of transportation efficiency. General economy and increased efficiency would be brought about, through consolidation, because the following advantages would obtain: 1—one set of executive officers instead of two or more; 2—one purchasing and accounting department instead of two or more; 3—longer trains with heavier loads, resulting in decreased cost of ten-miles; 4—elimination of duplication of equipment and terminals, with consequent reduction in overhead; 5—more economical routing of both freight and passengers.

The merging of railroads naturally tends toward monopoly, and the majority of us have the inborn feeling that monopoly is contra to general welfare. As a principle, when considering most commodities or services, this feeling is well grounded. But transportation is, in this respect, apart from average commodities or services. Rail transportation can be undertaken only at enormous financial outlay. The acquisition of right-of-way, grading and tunnels, tracks, bridges, signal systems, stations and terminals must be in order before a ton of freight can be moved. And these items must be maintained whether ten or ten thousand tons are moved per day. Now if two such systems serve the same territory, all such construction must be duplicated. And since the territory yields only a given amount of traffic, rates must be high enough to pay returns on twice the amount of investment actually necessary to do the work. If competition is begun, shippers may get lower rates temporarily, but only temporarily, since one of two things will arise: either one of the competitors will be ruined, in which event the shipper will face the single survivor who will immediately return to adequate rates, or a "gentlemen's agreement" will end competitive low rates.

During the Roosevelt administration it was believed that enormous combinations of capital stifled and impeded industrial progress. We now see the fallacy of that myth, it having been demonstrated that huge business combinations exert a beneficial influence in the reduction of production costs and retail prices, in increased ratio over the smaller concerns. At the present time there are five American firms that are doing more than a billion dollars' worth of business annually. There are fourteen companies having assets of more than a billion dollars, those fourteen including seven railroads, three insurance companies, one bank, one telephone company, one oil company and one steel company. The old-time "trust" which was supposed to have made its living "exploiting labor" and "damning the public" no longer exists—no longer can exist.

From the standpoint of the shippers (in which category all of us find ourselves) and in the interest of economy and efficiency, railroad consolidation should be a development of the next few years.

Impending Congressional Action to Be Constructive

FROM the business standpoint, some of the more important items on the legislative calendar are: tax reduction; railroads; agriculture; McFadden Banking bill; commercial arbitration; tariff; merchandise; misbranding and fixing retail prices; the extent of lawful combination and trade association co-operation; and a uniform and tighter bankruptcy law.

Present developments show tax legislation to be following along the lines of greatest popularity, and there is little doubt that reductions will be made in sufficient time to apply on payments of March 15th. President Coolidge has made it clear, in his recent addresses, that assistance to agriculture must come through co-operative marketing and a betterment of methods, rather than by direct government aid in credit extension or price fixing. Economically unsound legislation on this subject will probably meet with a prompt presidential veto.

Encouragement will probably be given railroad consolidations. Railroad rates will probably not meet with disturbing legislation. The large economies that are certain to result through the combination of competing lines are becoming more fully appreciated by both public and legislators, so that while actual enactment is not predicted, great impetus will probably be given the idea.

The tariff will come in for considerable surface agitation and some changes may be made in the functions of the Tariff Commission. There is small chance, however, of any deep-going tariff changes during the present session. A more strict bank-

—— on Timely Subjects

ruptcy law and an act to prohibit misbranding of merchandise will probably pass, such action being predicated, however, on the amount of time at the disposal of Congress.

Considering the general make-up of the present Congress and the favorable attitude of the President toward commercial enterprise, we are justified in viewing this session with no apprehension of destructive legislation. Rather there is splendid prospects that bills constructive in character will be passed.

Control Your Business with Budgets

GREATER co-ordination of forces and more harmonious thinking by subordinates are two factors constantly striven for by every successful business. In their attainment, it may be said, the four staples of business—finance, production, sales and accounting—can be knit into a closer fabric through the application of the business budget than by any other one means. It is only human nature that individual department heads should erect their own breastworks of defense to prevent the encroachment of other departments. No executive ever lived who could successfully and completely overcome this tendency. Never has there been a personality so great, a wisdom so vast, an authority so comprehensive, as to adequately co-ordinate the thinking and activities of several department heads, since that is a function which they themselves must perform.

Proper adjustment, skill, methods, are basic essentials in the successful operation of any business. Individual and varying capacities, personal ambitions and weaknesses, prejudices and eccentricities, only make the task of piloting a business the more difficult. Only executives who have a comprehensive grasp and complete understanding of his every department can hope to be successful. The proper use of the budget provides the executive with the needed information as nothing else can.

By means of the budget, the intelligence of an entire organization is formed into a unified plan of activity, then crystallized and concentrated into the space of an 8½ x 11 sheet. When based on recorded experience and governed by rational judgment it provides the best possible picture of past, present and future performance of every department. It is an exacting and rigorous analysis of the past, the probable future and what is desired and provides a basis for long range planning as well as immediate needs. Budgets should be applied not only to capital expenditures, but to sales and production. Its limitations should encompass every department. Good business men actually use the budget methods, whether unconsciously or by plan.

Budgets, however, should not be inflexible. Possible revisions at given periods will prevent destruction of initiative or possible "red tape." It will be seen, though, that under the budget, changes are not readily made since the reasons for them are more carefully studied. Budgeting can be applied to practically every industry—to every business. The budget will set definite goals, clarify purposes, coordinate effort and weave the whole into a fine, economic fabric.

Highlights of the 1926 Prospect

THE United Business Service sums up the vast amount of annual reviews and business opinions in the following manner:

"The course of business for 1926 starts with the considerable momentum derived from the speed and volume attained in 1925. To this excellent start the favorable influence of tax reduction and the lack of fear of unfavorable legislation. Shipping, in spite of the high levels reached during 1925, should show improvement, one of the results being improved demand for railroad equipment. Rail consolidations will also be a constructive influence.

Construction: Roads and public building will continue strong, as will small residence and farm building. A slight decline in other types of construction must be expected in most localities.

Stocks: After the long extended advance, the industrial averages appear to have discounted the best that can be expected. There may be some further strength in rails and oils, but in the absence of some unforeseen stimulus to higher prices, a slight decline is more probable than any further advance.

Commodity Prices: The past year has been one of comparative stability. The general level should hold fairly strong for the next three or four months. Later we may expect a moderate decline.

Labor: Railroad labor is demanding increases, and although some believe troubles are not impossible, we expect few labor difficulties during the first half of 1926.

Foreign Trade: The relatively high level of exports is maintained by large foreign loans. These should continue, but imports are creeping up on exports and will probably exceed them before the middle of the year.

Credit: The credit situation is the weakest link in the economic chain. Unsound expansion of credits has taken place in connection with building construction, real estate speculation and stock operations. Ultimately, these over-extended credits must be liquidated—with losses.

Conclusion: Most of the bullish influences are in full operations; the further we go into 1926, the more importance unfavorable forces will take on, but business in general should continue on a relatively high level, at least during the spring months.

Observations of a Traveler

(Continued from page 1537)

formerly on the engineering staff of the West Virginia Pulp & Paper Company, consists of a vertical steel shell lined with soapstone, having a flat suspended top arch with a breaching for carrying the gases to the boiler. It was installed and completed last August by the J. O. Ross Engineering Corporation with which Mr. Wagner is now connected. The gases arising from the incineration of the black liquor go to a boiler which formerly served as a rotary, and this is not capable of taking care of more than half of the nominal capacity of the furnace.

Warren Stationary Recovery Furnace

The furnace is started by spraying oil through an air nozzle at the side of the furnace. The oil is ignited and burned until the temperature of the furnace reaches the soda fusing point, an operation which takes about an hour and a half, with the consumption of little more than a barrel of oil. Air for combustion is admitted to the shell through an air jacket surrounding the lining, thus preheating it and preventing undue thermic action on the lining. The air is admitted through air ports in regulated amount as determined by gas analysis.

The liquor coming from the storage tank at a 150° to 160° Fahr. and 28½ to 34° Be., is sprayed into the top of the furnace through an air nozzle, in a downward direction, and as soon as the molten soda begins to flow from the bottom of the furnace, which it does in about a minute, the oil nozzle is withdrawn and the opening closed by a water cooled block, no further fuel being required. The soda, entirely free from carbon, is seen to flow in a steady stream from a spout directly into a solution tank below the floor level where it is dissolved under steady agitation, without noise, except when a lump which has cooled on the spout has to be knocked off.

The nominal capacity of the furnace is 500 gallons per hour and we were told that up to 64 per cent of the gross heat value could be obtained as high pressure steam. While this is undoubtedly true as regards a soda furnace, in sulphate work 52 to 54 per cent appears to be the economic limit owing to the endothermic reaction or absorption of heat in reducing salt cake to sulphide.

With the right type of boiler in use heat should be obtained from this furnace for the entire operation of cooking, evaporating and bleaching at the Spring Grove plant, seeing that 500 gallons of soda liquor at 350 Be. (160° Fahr.) will give 12,000 lb. steam. Owing to the limited capacity of the boiler accurate data could not be obtained, but the indications are that the total heat results estimated above may be exceeded when the right kind of boiler is employed.

The P. H. Glatfelter Company was one of the first firms of papermakers to abandon the use of deckle straps on Fourdrinier machines. On a new 117-inch Black-Clawson machine the wet end is equipped with a deckle arrangement consisting of a wedge-shaped brass frame extending 4½ ft. from the stock inlet or slice. From the bottom of the frame a feather of rubber presses lightly on the wire. A patent on this contrivance has been applied for. The P. H. Glatfelter Company has established a reputation as leaders in new developments of which the aforenamed are isolated but notable instances observed in a somewhat hasty tour of the plant, which had been previously visited by the writer six years earlier when the surface area of the mill and its tonnage capacity were only half what they are today.

The Deckleless Paper Machine

Bamboo as Papermaking Material

In Bulletin No. 1329 of the United States Department of Agriculture, there is a paragraph on the use of bamboo as papermaking material. American papermakers are aware that important lines of work on the utilization of bamboo have been carried out in India by the head of the forestry department at Dehra Dun, though reference to this is not made in the present bulletin. It is observed that with the exception of the species of bamboo known botanically as **Bambos tulda**, few of the varieties of bamboo which can be grown in the United States are entirely suitable for papermaking. The bulletin states that **Bambos tulda** has potential value for papermaking as it is readily propagated from seeds, which is an advantage where quantity production is required. The plants grow rapidly if on good, strong soil where frosts and freezes are not likely to interfere. Points along the Gulf coast are indicated as good growing ground and forty to fifty tons of papermaking material a year per acre should be expected after the fourth or fifth year.

Replacing Conveyor Belt Idlers

A new and ingenious kind of roll for replacing conveyor belt return idlers has just come to my notice. If the old idler has gone wrong and needs replacing, simply break or cut it off and put on the new split steel roll without the necessity of disturbing the other rolls or the shaft. Before the advent of this device it was a common practice to renew the shaft and everything else rather than bother removing one of the old idlers. It is claimed, also, that one of these split steel rolls costs less than the old-fashioned type.—Schaphorst.

The principal essential of economical artificial lighting is a layout of units which have been rightly planned. Eyes, spoilage and lighting bills are saved by this method.

Program of 49th Annual Meeting of American Paper and Pulp Association, 1926

MONDAY, FEBRUARY 22, 1926

FORENOON

9:30 Technical Association.....Rooms 109, 110, 151
10:00 Cost Ass'n. of the Paper Industry..Room 151-B

AFTERNOON

2:00 Technical Association.....Rooms 109, 110, 151
2:00 Cost Ass'n. of the Paper Industry..Room 151-B
2:30 So. Kraft Mfrs. Ass'n.....Room 112

TUESDAY, FEBRUARY 23, 1926

FORENOON

9:30 Technical Associations.....Myrtle Room
10:00 Cost Ass'n. of the Paper Industry..Room 151-B
10:00 Tissue Paper Mfrs. Ass'n.....Room 110
10:30 Converting Paper Mills Ass'n.....Room 114
10:30 American Waxed Paper Ass'n...Rooms 100, 101
10:30 Salesmen's Association.....East Room
10:30 U. S. Pulp Producers Ass'n.....Room 109

AFTERNOON

1:00 American Waxed Paper Ass'n..Rooms 100, 101
(Luncheon) .....Room 112
1:00 Cost Ass'n. of the Paper Industry..Room 151-B
(Luncheon) ..... Room 115
2:30 Cover Paper Mfrs. Ass'n.....Room 110
2:30 Technical Association.....Myrtle Room
2:30 Tissue Paper Mfrs. Ass'n.
High Grade Division.....Room 109

EVENING

7:00 Technical Association.....Hotel Commodore
7:00 Tissue Paper Mfrs. Ass'n.
(Dinner) .....Hotel Astor
7:00 Salesmen's Association.
(Dinner) .....Roof Garden, Waldorf
Information and Press.....Room 106

INFORMATION AND PRESS.....Room 106

WEDNESDAY, FEBRUARY 24, 1926

FORENOON

9:30 Technical Association....Room 151, Myrtle, 110
10:00 Cost Ass'n. of the Paper Industry..Room 151-B
10:00 Writing Paper Mfrs. Ass'n.....East Room
10:30 Cardboard Mfrs. Ass'n.....Room 109
10:30 Wrapping Paper Mfrs. Service
Bureau .....Tea Lounge
10:30 Woodlands Section.....Room 115

AFTERNOON

12:30 Paper Makers' Advertising Club.
(Luncheon) .....Room 112
2:00 Technical Association.....Rooms 151, Myrtle
2:30 Glazed and Fancy Paper Mfrs.
Ass'n. .....Room 114
2:30 So. Kraft Mfrs. Ass'n.....Rooms 100, 101
2:30 Writing Paper Mfrs. Ass'n.
Fine Paper Div.....Room 109
2:30 Writing Paper Mfrs. Ass'n.
Middle Grade Div.....Room 110
2:30 Woodlands Section.....Room 115
2:30 Cost Ass'n. of the Paper Industry..Room 151-B
2:30 Writing Paper Mfrs. Assn.
Sulphite Bond Div.....East Room

THURSDAY, FEBRUARY 25, 1926

FORENOON

9:30 Technical Association.....Rooms 109, 110, 151
10:30 American Paper and Pulp Ass'n.
Annual Meeting .....Astor Gallery

AFTERNOON

1:00 Binders Board Mfrs. Ass'n.
(Luncheon) .....Room 112
1:30 President's Luncheon.
(Advisory Council).....Room 115

EVENING

7:00 A. P. P. A. Reception.....Astor Gallery
7:30 A. P. P. A. 49th Annual Banquet.
.....Grand Ball Room

A FLOWER unblown, a book unread, a tree with fruit unharvested, a path untrod, a house whose rooms lack yet the heart's divine perfumes, a landscape whose wide border lies in silent shade 'neath silent skies, a wondrous fountain yet unsealed, a casket with its gifts concealed—this is the year that for you waits beyond tomorrow's mystic gates.

—Horatio Nelson Powers

British Forestation Development

By A. EDWARD HAMMOND

BEFORE commencing on a concise and necessarily brief survey of the aims and accomplishments of the Forestry Commission of Great Britain, it may be advisable to make a few prefatory remarks on the more important stages of forest history in the British Isles, and the situation which lead up to the passing of the Forestry Act of 1919. State forestry is a new departure in Great Britain, and it is inevitable that the movement will for some time be handicapped by past indifference to the subject of forestry, and retarded to some extent by the opposition of interested (and even disinterested) parties.

The forest history of the United Kingdom can be roughly divided into four periods.

1. A period of destruction, during which resources were drawn upon without adequate replacement.

2. A period of private enterprise, during which voluntary individual effort attempted to re-establish the depleted forests and woodlands.

3. A period of inquiry, when it was gradually realized that unaided private enterprise could no longer cope with the growing demands for timber.

4. A period of state action, during which a national forest policy was defined and the first steps taken to bring it into being.

Period of Destruction

The period of destruction really commenced with the relaxation of the forest laws in the 13th and 14th centuries, and continued to the end of the 18th century. Before the commencement of this period, the Norman Conquerors had added to those forests which had survived the Roman Conquest, and the ravages of the Saxons and Danes. It is, in fact, to the Norman kings' love of hunting that we owe the preservation of our own Crown woods and forests in England.

From 1482, forest surveys and reports show that there was a growing alarm about the national timber supply. Clearance for agricultural purposes, felling for smelting, the firing of undergrowth for grazing, and later, the destruction of whole forests for sheep pastures were in turn responsible for diminishing the forest resources of this country.

Toward the end of the eighteenth century, landowners began to turn their attention to planting on an increased scale; but earlier than this—in 1713—Government grants for planting were made in Scotland. Up to 1885, it was generally supposed that imports from abroad, supplemented by private enterprise, would always be able to meet the increasing demand for timber, but a series of causes which had increased the demand for timber to an extent previously unknown led up to the period of inquiry which extended from 1885 to 1915. In 1885, the first definite step was taken by the state in appointing a select committee of the House of Commons to deal with forestry education. From 1887 onwards, departmental committee and Royal Commissions followed in rapid succession. In 1909, the Royal Commission on Coast Erosion and Afforestation recommended that a Forestry Board should be appointed. The Commission appointed under the Development Act (1909) were accordingly empowered to devote attention to forestry, and in 1911 they brought out their policy containing the following objectives:

1. Effective education in forestry, organized research and demonstration.

2. Investigation to ascertain where State forests might be economically and remuneratively provided.

3. Provision for the creation and maintenance of staffs, to give practical advice and assistance to those willing to undertake afforestation.

In 1915 Lord Selborne, President of the Board of Agriculture and Fisheries set up a committee to expedite home fellings, and it soon became evident that, owing to the depletion of home resources, a national forest policy would become inevitable after the war. Ships which were badly required for the transport of food were having to be diverted for the carriage of timber, and it was not until arrangements were made for the supplies of wood for the British Army from the French forests, and for the ruthless felling of old and young woods at home that ships could be released for importing food.

The second step came in 1916, when Mr. Asquith—then Prime minister—appointed a sub-committee of the Reconstruction Committee of the Cabinet, under the chairmanship of the Right Hon. F. D. Acland to consider the best means of conserving and developing the forestry resources of the Kingdom, following the experiences of the war, and by May, 1917, the Committee had prepared the principles of a national forest policy.

National Forestry Policy Instituted

On November 29th, 1919, Forestry Commissioners were appointed, among which were numbered Lord Lovat, Lord Clinton, and the Right Hon. F. D. Acland. The Forestry Act provided for a 10-year grant of 3½ million pounds. The Acland Committee had fixed on the planting of 1,777,000 acres as enough to assure a full three years' emergency supply. They proposed that two-thirds of this area should be planted within the next forty years and suggested that in the first ten years, in view of the time required for the development of nurseries, the growing of seedlings, the training of the staff, and so forth, 200,000 acres should be the planting program. It was estimated that 50,000 acres out of that total might be planted by public bodies and private owners under a system of grants in aid.

The national forest policy defined by the Acland Committee falls naturally under two heads:

1. **The Ultimate Objective**, which is the creation in Great Britain of reserves of standing timber sufficient to meet the essential requirements of the nation, over a limited period of three years in time of war or national emergency.

2. **The Immediate Objective**, which is a ten-year scheme based on a block grant.

The Commissioners were appointed for five years; three years have now elapsed and it is now possible to make a short review of the work accomplished.

The report of the Acland Committee has been taken as a guide by the Commissioners. That report recommended a division of the work of afforestation between the State itself and public bodies or private owners, assisted by State grants. The portion of this program definitely applicable to the first five years provided for the afforestation of 33,300 acres of conifers by direct State action. In addition an undefined proportion of the 10,000 acres of hardwoods allotted to the ten-year period was to be replanted by the State. It was also contemplated that 110,000 acres would be planted or replanted during the ten-year period by local authorities or private individuals with state assistance, but no definite proportion was allocated to the first five years.

Result of Five Years' Afforestation

The area that has actually been planted by the Commission in these five years is 39,469 acres, of which 37,940 were with conifers, and 1,679 acres with hardwoods. The Commissioners decided to include the planting of felled woodland in their efforts, and of the total acreage planted, 11,652 acres were acquired in a derelict condition and replanted. Grants made to public bodies and private individuals have resulted in the planting (or preparation for planting) of 42,082 acres. The total area planted under the auspices of the Commission therefore, represents 81,551 acres to date.

The area of planting land acquired is 207,718 acres (including 4,866 acres in Ireland) of which approximately 100,000 acres represents an addition to the existing forest area, the remainder being felled or devastated woodland. (The area to be acquired at the end of the five years was set out by the Acland committee at 165,200 acres.) Some 136,604 acres of this land is described as plantable; but the distribution of this land and the proportion of it plantable in different

countries are contrary to the anticipations of the Acland Committee who found that out of 8,500,000 acres of plantable land in Great Britain, no less than 6,000,000 acres were in Scotland; but the classification of the Forestry Commissioners showed that of the 78,453 acres so far acquired in England and Wales, 76,312 are returned as plantable; whilst of the 129,265 acres in Scotland, only 60,292 are plantable. This is considered to be due to the bigger proportion of the wilder and high-level land in Scotland.

The achievements of the Forestry Commissioners as compared with the program from year to year are as follows:

PLANTING PROGRAM: CONIFERS

Year	Acland committee's Program Acres	Commission's revised Program Acres	Actually program Acres	Surplus (+) or Deficit (—) on Acland committee's program Acres	Surplus (+) or Deficit (—) on Commission's revised program Acres
1st year, 1919-20....	....	1,600	1,296	+1,296	— 304
2nd year, 1920-21....	3,300	5,700	6,105	+2,805	+ 405
3rd year, 1921-22....	6,700	8,100	10,517	+3,817	+2,417
4th year, 1922-23....	10,000	11,500	9,807	— 193	—1,693
5th year, 1923-24....	13,300	14,800	10,065	—3,235	—4,735
6th year, 1924-25....	16,700	18,100			
7th year, 1925-26....	20,000	21,000	37,790	+4,490	—3,910
8th year, 1926-27....	23,300	23,000			
9th year, 1927-28....	26,700	23,000			
10th year, 1928-29....	30,000	23,200			
Total 150,000		150,000			

The work of the Committee, however, has not been confined to the afforestation program. The Crown Woods (of which there were 16) have been taken over. A survey of the woodlands of the United Kingdom has been organized and almost completed with the aid of a large body of voluntary workers. Two conferences of foresters have been held, one in London and the other in Canada, and an Imperial Forestry Institute has been founded at Oxford. Grants for Forestry Education have been made to four universities and Colleges in England and Wales, and to three in Scotland. The training school for working foresters has been maintained and a new school of similar type has been established in Scotland near Beauly. The systematic establishment of holdings for forest workers has also become a part of the afforestation operations, although little more than preliminary arrangements have been made in this direction.

The forest holdings to be created will consist of a cottage and garden with enclosed agricultural and cultivatable land up to a maximum of ten acres, together with such additional grazing land as may be available. The holder should thus be able to keep two cows and use the holding for the production of potatoes and other crops according to the character of the land. The holder will be guaranteed by the Commissioners not less than 150 days' work in the forest, for the most part at fixed piece rates.

For the present it is laid down that not more than five holdings shall be provided for every 1,000 acres of forest land acquired. The maximum expenditure on houses and buildings is fixed at £180 and the maximum value of the enclosed land to be associated with the building at £150. The latest report states that the commissioners are engaged on the creation of 141 forest holdings.

Progress is not sufficiently advanced for the Forestry Commission to give any indication of the likely extent of each class of timber to be produced, nor the territories most suitable for the different types—pulpwood for instance; but further reports will be made as the work progresses.

Steam Generating Unit Simplifies Steam Production

The Combustion Steam Generator represents one of the most radical and important developments that have thus far occurred in steam boiler practice. Generally speaking, until recently there has been no substantial improvement in boiler design in many years. The present type of boiler, with minor exceptions, has not advanced since the days of James Watt. Engineers have known that the lower row of tubes in a boiler exposed to the radiant heat of the fire and the heating surface included in the first pass, do a very large percentage of the total work, but they have found no way to apply this basic fact to the present-day type of boiler.

It is the application of this principle that has been responsible for the remarkable results obtained with the Combustion Steam Generator. In this generator, practically all the boiler heating surface is exposed to radiant heat. The application of pulverized fuel firing to the generator design permits the elimination of the large furnace with its refractory surfaces, water screens, side wall screens, etc.

The Steam Generator unit consists of a furnace, the walls of which are composed of tubes of the fin type, all exposed to radiant heat. Pulverized fuel is introduced through burners in the four corners and burned in a turbulent condition in the form of a vortex, due to the fact that the primary mixture of fuel and air as well as the highly preheated secondary air enter tangentially to an imaginary circle.

The flame and gases descend through a multi-tubular water screen into a settling chamber where the ash is deposited and the gases flow through a superheater, thence through an air preheater to the stack or to the induced draft unit.

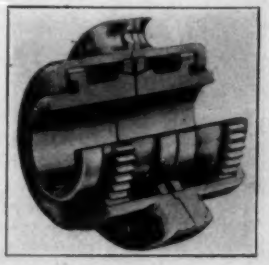
The horizontal headers for the remaining two side walls are, as mentioned before, also connected to the lowermost drum, receiving their water supply from this drum and discharging into the upper headers which in turn are connected to the main drum.

As will be evident, probably the greatest saving due to the new Steam Generator will be in the construction cost of the plant. This unit which can be installed in from one-half to two-thirds the space required for present-day boiler units to produce the same amount of steam, means a great saving in labor, construction cost and real estate investment. Another element which is worthy of consideration is the reduction of time necessary to build and equip a power plant against present-day methods.

The development of the Combustion Steam Generator unit establishes pulverized fuel as a most economical method of burning coal, because the new unit reduces the investment charges which, in the past few years, have been growing steadily until the margin of benefits over simpler types of fuel burning methods have in many cases been questioned. By removing all the auxiliary equipment and designs necessary to burn pulverized fuel most efficiently, the Steam Generator unit has brought into one a pulverized fuel unit, a completely enclosed water cooled furnace and the advantages of highly preheated air.

A Reliable Flexible Coupling

To meet the demand for a reliable and efficient flexible coupling that will satisfactorily compensate for the usual and unavoidable errors of shaft misalignment in all classes of connected machinery and allow free end float to two connected shafts, the flexible coupling shown herewith has been developed by The Poole Engineering & Machine Co., Baltimore, Md. Experience has proven this to be a most practical type for ordinary as well as severe service conditions.



The Poole Flexible Coupling has six parts, two hubs having an external gear on each, meshing with internal gears in two sleeves which are bolted together, and two aligning rings which are fitted in the two sleeves.

The outer faces of the teeth on the hubs are formed spherically, which provides a true self-aligning bearing for the connecting sleeve, so that if the two shafts are out of alignment, the sleeve assumes a neutral position with a perfectly formed and lubricated bearing on the spherical surface of each shaft hub.

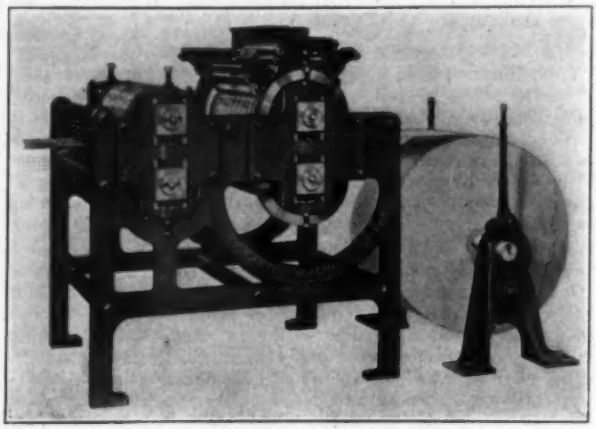
Simplicity of design, unusual strength which is greater in all cases than the connected shafts, and complete protection from dust and dirt are among its principal features.

The Garratt-Callahan Co., of San Francisco, Chicago, and New York, manufacturers of "Magic" Boiler Preservative, announce that they have moved their Chicago sales office to 310 South Michigan Avenue. Mr. A. H. Baker, Vice President and General Manager of the Company, is in charge of this office with Mr. A. H. Hawkinson, Sales Manager.

New Machine for Carton Industry

Cartons which heretofore have been mainly printed on flat-bed presses, creased and die-cut on separate machines, and stripped by manual labor can now be produced complete on a new machine known as the Rotary Carton Machine, manufactured by the Rotary Carton Machine Company, Minneapolis, Minn.

The Rotary Carton Machine operates direct from the roll of paper and prints from one to six different colors on both

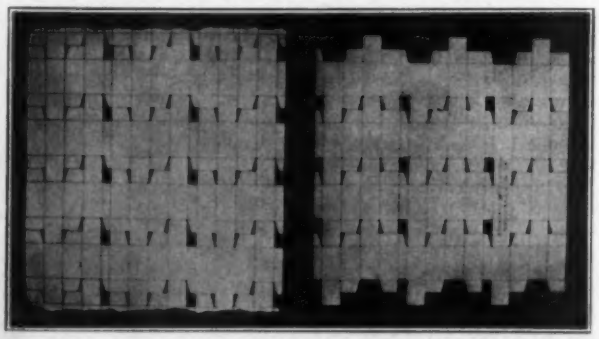


The Rotary Carton Machine

sides of the sheet at the same time, creasing, cutting and stripping as it prints. The use of manual labor and the consumption of valuable time heretofore wasted in stripping the cut-away portions of the carton is entirely eliminated in the new machine, all stripping and elimination being done automatically.

A large percentage of waste of the paper, which is necessary under the method where the paper is cut in sheets, is avoided, as the continuous run of the paper from the roll through the new machine naturally eliminates the waste that occurs along the edge of each separate sheet.

The fact that printing, creasing and cutting is done by



Comparison of carton production from two sheets of the same size. The one on the right is the standard size carton sheet 36x38 inches. The one on the left shows how the Rotary machine permits the cartons to interlock where on the flat sheet, the stock is wasted. The black portions of each photograph indicate the cut-away sections

the rotary principle, permits the new machine to be run at high speed, thereby producing much larger quantities of finished work in much less time and at less expense than has heretofore been possible.

The paper runs through the machine on practically a flat plane, and the printing is done on both sides of the sheet simultaneously—if such is desired. Many cartons are now printed both inside and out, and more would be so printed, were it not for the fact that the cost of present methods is so great.

Incidentally, all color units of the Rotary Carton Machine are adjustable in relation to each other, and each unit can be removed individually and adapted for any different color combination required. The construction is such that perfect register is obtained automatically at all times.

Another valuable feature of the machine is one which permits the removal of both printing and cutting rolls to supply larger or smaller "shells" where work of different size and proportions is required.

It is understood that the Rotary Carton Machine Company intend to lease their machines and expect to be in a position during the course of the next few months to lease them in quantities.

Something New in Method of Preparing and Furnishing Stock

Stuff boxes for measuring the amount of furnish supplied to the paper machine have been discarded by the Escanaba Paper Co., Escanaba, Mich. Further, they have done away with the machine chest and its pump. In their stead, they have installed a Trimbey and Tibbitts proportioning and metering system to which all the paper ingredients are pumped. This machine is set for the desired proportions of each, there being meters for ground wood, sulphite, clay, color, alum and size. The system is driven from the line shaft of the paper machine through a suitable variable speed drive, by means of which its speed is governed so as to deliver the necessary quantity to give the desired weight of sheet.

The stock upon leaving the proportioning and metering system flows directly to the mixing pump and from there to the screen at the head of the paper machine. Each stock is held at a definite constant consistency by means of Trimbey automatic consistency regulators.

The results have been as follows: the weight of the sheet is held more uniform; the sheet formation is better; the sheet is stronger. As the speed of the paper machine changes, the amount of stock furnished changes in direct proportion, since the metering system is driven from the line shaft of the paper machine. Colors can be changed and matched almost instantly, since there is almost no time lag from the time the stock is mixed until it is made into paper, and no chests to have to change with the piping and pumps. The proportions are kept absolutely uniform and the mixing the same at all times, hence the better formation and increased strength.

When this method is used, each stock is prepared separately; each is beaten the amount considered best for the grade of paper being made; then they are brought together by the metering system and the required amounts of color, alum and size added.

This is quite a departure from the usual method, but it is said that the results justify it for getting a better and more uniform sheet, both as to quality and uniform weight. There is a further saving in power and labor which amounts to considerable in a year's time.

Hummel-Ross Adopts Co-operative Insurance Plan

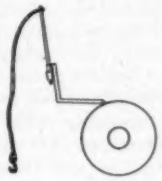
In keeping with the spirit of the Christmas season, the Hummel-Ross Fibre Corporation, of Hopewell, Va., has adopted a co-operative group insurance program, the cost of which to employees will be reduced materially through the contributions of the company. More than 97 per cent. of the employees eligible to enter the plan are participating, for a total life insurance coverage of approximately $150,000, while each one receives additional protection under a health and non-occupational accident policy.

The insurance was underwritten by the Metropolitan Life Insurance Company. The life insurance of each employee starts at $500 increasing $100 with each future year of service until $1,000 is reached. In case of sickness or injury while away from work, he will be paid $10 a week for a maximum of 26 consecutive weeks. Should he become totally and permanently disabled before age sixty, the full amount of his life insurance will be turned over to him in monthly installments for a stipulated period. During this time, premium payments will be waived by the insurance company.

Practical Helps for the Mill Man

A Doctor Lifting Device

THE lifting of the doctors on the wet presses of paper machines is becoming quite a problem with the increased width of the machines and the consequent increase in the weight of the doctors. The illustration shows a wooden spar which fits a socket bolted to the back of the doctor. To raise the doctor, one of two men pull on the rope attached to the spar and when the doctor is tilted, the rope may be used to secure the doctor in place while work is being done.

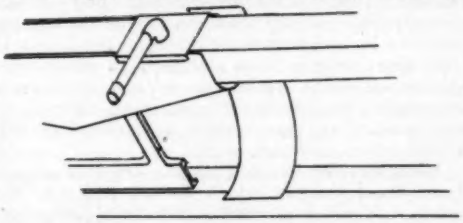


A Safety Reminder

NEAR the starting lever or other control device for every machine there should be a small holder for a card. On this card the repair man should write the last repairs to the machine after they have been completed. This will give the operator an idea of what to look out for as he starts the machine and will direct his usual inspection more particularly to the part which has been repaired.

Permanent Protection from Deckle Splash

SPLASH from the deckle strap shower is frequently prevented by oilcloth tied onto the deckle strap washing trough. This is a sloppy looking expedient and it takes up too much of the machine tender's time when the machine is started after a wire has been changed. Stock scraped off the return of the deckle strap by the wash trough is kept from falling on the wire by more oilcloth to which there are the same objections. A permanent galvanized iron cover where the shower is arranged on the deckle strap washer, and another piece of galvanized iron riveted onto the wash trough, as shown in the sketch, will take the place of the other piece of oilcloth. These will not have to be replaced every time the wire is changed.



Remedy for Paper Cutter Trouble

A SUPERINTENDENT of a paper mill where paper cutters are used, finds that he is having trouble with the old style of disc rubbers for the friction flanges. When the cutter was run at high speed the flanges gave trouble, cutting the sheet short and long. He found friction fibre the best material for this purpose.

Helps Sheet Formation

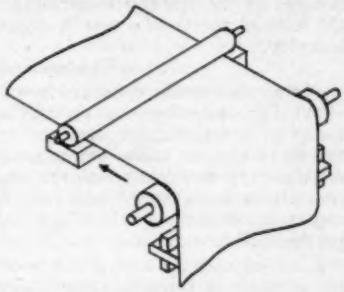
AN aid to sheet formation in one mill is a wooden roll covered with brass or wooden pegs. This is revolved in the head box in a direction opposite to that in which the stock runs. This is a variation of what is getting to be a well-known device.

A Use for Signal Lights

A DEVICE in connection with dryer felts running to one side or the other is a system of lights. This is especially useful where one dryer felt is practically in the basement and where the top dryer felt is inclosed in a hood. There is a contact on each side of the dryer felt and a light is attached to each contact. The lights are so placed and colored that the machine tender knows at a glance which felt needs to be guided a little.

Kink for Board Machine Felt

AFTER the felt on a board machine has been cleaned by being whipped while a shower is played on it, it contains too much water for proper formation of the sheet. Therefore, before the first layer of paper goes on the felt, the felt is passed over a suction box. It was discovered that a small wooden roll covered with six or seven layers of old wet felt running directly on top of the suction box gave a great deal more suction and delivered the felt to the cylinders much dryer.

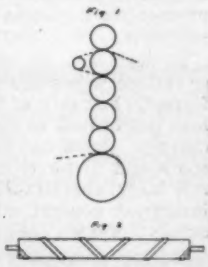


Changing the Fourdrinier Wire

CARRYING the lead pole of a new Fourdrinier wire up the dismantled Fourdrinier is materially aided by ropes stretching from each end of the pole to the head box. Two strong men, one on each rope, pulling from the head box give additional security, and the members of the gang putting on the wire can also pull on the two ropes until the lead pole is up to the head box.

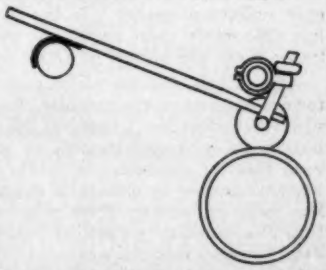
Using a Fly Roll

THE fly roll on a super-calender is a small roll placed near one of the calender rolls so that the paper after having passed one nip of the stack may be led over the fly roll before going through another nip. This is done when one of the calender rolls has a slight defect. By passing the paper over the fly roll the impression of the defect of the calender roll received in one pinch will be ironed out in the other. In one mill it was found that the paper wrinkled in going into the stack from the fly roll and there were numerous calender cuts. A worm was put on the fly roll with electrician's insulating tape. The trouble from wrinkling was eliminated and the loss from calender cuts was reduced seventy-five per cent. Figure 1 shows the location of the fly roll. Figure 2 shows the worm on the fly roll.



Easy Way to Stop Slitting Knife

WEDGES are used by winder men to push the top slitter away from the bottom slitter on certain types of winders when the paper is being threaded over the winder or when a splice is being made. It is necessary to climb over the winder drums to do this and sometimes to climb over the finished roll on the winder as well. These wedges can be replaced by a stick with a wedge-shaped nose and a piece of thin iron making a hook. The stick runs from the shaft on the gear for raising the finished rolls to the slitter and is inserted where the wedge was formerly used and with a great deal more ease.



Outline of Cost Accounting Practice in Use at L. L. Brown Paper Company*

Specific Reference to the Application of Accounting Machine Methods to the Operation of the Modern Cost System

By Charles W. Gould, Jr.

MODERN cost accounting practice today covers so vast a scope that in a brief talk, it is possible to do little more than merely touch upon the most outstanding facts and indicate a few of the principal fundamentals.

The cost accounting practice of the L. L. Brown Paper Company, in general, is much the same as most modern cost systems in use and is in direct conformity with the fundamentals selected by the Writing Paper Manufacturers' Association, as the basic elements of a cost system as applicable to the paper industry.

Fundamentals

The fundamentals employed are as follows: Dual purpose —(1) For operating and accounting purposes, (2) for selling price estimates. Double entry control—all material quantities and all cost values to be checked and controlled through double entry accounts which are an integral part of the general accounting system; unit cost, direct charging materials; departmentalization; normal cost through budget system; departmental rate method.

In calculating the cost of our product, it is relatively a simple problem to determine the elements of material and labor costs for each lot. It is in the proper distribution and application of the burden charges to the cost of the product that the more serious difficulties are encountered, and yet burden is a very important factor of cost.

All items of expense are allocated as nearly as possible, direct to the product for which such items of expense are made. Since practically all of these expenses are incurred by or for certain operations or departments, rather than for any part of the product, it follows that these items of expense should be charged direct, or at least distributed to these operations or departments according to the benefits they receive from such expenditures. The total expenses of these departments are then applied to the product on a basis which accurately measures the expense earned or absorbed by the product as it passes through the successive operations or processes.

To that end, we have divided our mills into departments or centers, in accordance with the operations or processes performed. For each of these centers, a total annual burden has been determined which consists of some or all of the following charges: Land and buildings factor charges; machinery and equipment factor charges; miscellaneous fixed charges; indirect labor; supplies and miscellaneous expense; compensation insurance; general mill burden; steam; electric power; water supply; repairs.

Having distributed these charges to the individual centers, we are able to calculate a machine hour, man hour or process rate for each producing center or operation, this rate being the medium through which the burden is charged to the cost of the product.

The complete development of burden is made with the aid of three kinds of statements which we call appendices, exhibits and schedules.

On the exhibits are assembled the total burden charges for each individual center. In the development of our burden, it has frequently been necessary to make preliminary calculations; these are shown in detail on the appendices.

After all the factors which make up the burden of each center are entered on the exhibits, they are summarized on schedules. Schedule No. 1 itemizes the charges and shows the total burden of each department, as well as the total charge for each class of expense. Schedule No. 2 is a summary of the burden charges by classes of expense. Schedules No. 3 and 4 are made up directly from schedules No. 1 and 2 and constitute the standard periodical journal entries which carry the fixed charges into the accounts. The charges against the individual burden center accounts will be made from schedules No. 3 and 4; the corresponding credits are made to the various reserve and suspense accounts in the general ledger.

Appendices

The Plant Ledger—On this appendix are assembled the values of the various classes of fixed assets. The total of these items represent the amount of capital invested for manufacturing purposes. These figures are used as the basis of all fixed charges, namely, Taxes, Insurance and Depreciation.

Fixed Charges—The amount of taxes and insurance found to be chargeable to manufacturing burden is expressed as a percentage of the plant values and these percentages are used in determining the distribution of these charges.

Depreciation upon the several classes of assets is taken at rates customarily used on the types of equipment represented.

Repairs to buildings are considered as a fixed charge and are calculated at a percentage of the building values.

Building and Ground Expense—The total charges are classified under four headings: Heating, Lighting, Fire Protection and General. These items of building and ground expense are distributed to the buildings on the basis of floor area, taking into consideration each particular class of service. These charges are carried to the Land and Buildings factor.

Land and Building Factor Charges—On this appendix we calculate the fixed charges on land and buildings, including the building and ground expense charges as referred to above. This appendix also shows the floor space of the buildings, giving the definite location of each center and the area assigned to the centers in each group. The total number of square feet of floor space divided into the total annual charge, furnishes a rate which is applied to the floor space occupied by each center, and is then carried to the exhibits representing the various centers.

Machinery and Equipment Factor Charges—This appendix shows the distribution of machinery and equipment and also the calculation of the fixed charges on the equipment for each center. It is taken directly from the Plant Ledger cards. The plant ledger is so designed to show plant values by classes of assets, subdivided by burden centers and further subdivided by classes of equipment. Taxes, insurance and depreciation on these values are carried directly to the exhibits set up for each center.

Miscellaneous Fixed Charges—On this appendix we show those fixed charges which do not apply to the plant as a whole, but which are chargeable to a particular department. They consist for the most part of insurance and taxes applicable to individual centers.

Indirect Labor—By indirect labor we mean that labor which is charged as a part of the burden, as distinguished from direct labor which is charged direct to a particular lot number. All labor with the exception of rag hand-cutting and inspection, the sheet calendering and plater operations and the labor of sorting, we consider as indirect. This method is used since most of the so-called productive labor is so much a part of the machine operation in some cases and very uniform as to distribution over the product passing through a department in others, that more accurate results and greater simplicity are obtained by treating this labor as part of the burden and applying it to cost as a part of the burden rate.

Supplies and Miscellaneous Expense—On this appendix we estimate the cost of supplies for the various departments, including miscellaneous items of expense such as grinding rolls and knives, purchased power and trucking expense, but not including any charge for repair material.

Compensation Insurance—This charge is based on the payroll and the latest premium rates obtainable. The periodical charge is obtained by analyzing the payroll by production centers and applying the rate for that class of labor in that center.

General Mill Burden—The charges assembled under this heading are those not directly applicable to any center, but which apply to the mills as a whole, including such expenses as the cost department, mill offices, first aid and other miscellaneous items about the mills. This expense is distributed to the centers upon an arbitrary basis.

The redistributed centers are not charged with any portion of this expense.

*Presented at meeting of Connecticut Valley Division of the Cost Association of the Paper Industry, Holyoke, Mass., November 12, 1925.

Steam Distribution—The distribution of the steam plant charges are assembled on the exhibits and are made on the basis of the estimated pounds of steam condensed. The distribution is made after experimental tests have been made showing the steam required by the various departments.

Electric Power—The distribution of electric power charges are based upon the estimated kilowatt hours required by the various centers annually. Various tests are made from time to time to obtain the figures to be used as a basis for this distribution.

Water Supply—This appendix shows the annual charge for water supply and its distribution to the centers. The estimated number of gallons required yearly by the department using the water are estimated and these figures are reduced to a percentage of the total.

Repairs—The annual charge for repairs to machinery and equipment included in each center is estimated. Such estimates are based upon actual experience.

Accurate Records Essential

Cost data, to be reliable, must be based upon accurate records of material consumption and of labor and a proper distribution and application of the burden or overhead charges.

Raw Materials

Materials form a very important part of the cost of paper. Our principal materials are rags, pulp, hides for sizing, chemicals and colors. Inventories of all materials are carried at actual cost. In charging rags used, to the product made during a period, a standard price is determined, based upon market conditions, for each grade of rags. The difference between the standard and actual cost is absorbed in a price variance account.

Sorted Rag Inventories

At the close of each period, after baled rags are recorded as used and posted to the proper Material Used Register Sheets, they are footed and the total weight and rag cost recorded on the Sorted Rag Inventory cards. To the total, cost of baled rags used is added rag hand-cutting and inspection labor together with the absorbed burden. A Register of Sorted Rag Summaries is used to collect currently the various items entering into the cost of dressing rags. At the close of the period, all columns are footed, the sheets balanced and the totals thus obtained used as a basis for a journal voucher.

Half Stock Cost Summaries

When a report of Sorted Rags Used is received in the cost department, a Half Stock Cost Summary Card is made out, to show the kind of half stock made, on which the total quantity and cost of materials used in the bleach will be shown together with the conversion charges, thus giving a total cost of each bleach made.

A register of Half Stock Cost Summaries is used to collect currently the various items entering into the cost of making half stock. At the close of the period, all columns are footed, the sheets balanced and the totals thus obtained used as a basis for a journal voucher.

Stuff Cost Summaries

When the furnish order reaches the cost department, a Stuff Cost Summary card is made out indicating the kind of furnish made and the total quantity and cost of each item entering into the cost of stuff. The burden charges are calculated using the proper operating rate, thus completing the cost of the furnish. The total quantity of rough paper made on each furnish is recorded in the section of the Stuff Cost Summary card, headed Lot Costs. The total cost of the furnish is then prorated to the various lots which have been made up from the furnish on the basis of the rough paper weight in each lot. The stuff cost for each lot is then posted to the Lot Cost Summary card (Rough Paper).

A register of Stuff Cost Summaries is used to collect currently the various items entering into the cost of stuff. At the close of the period all columns will be footed, the sheets balanced and the totals thus obtained used as a basis for a journal voucher.

Lot Cost Summaries (Rough Paper)

Rough paper delivered from the loft or air dryer may be run through the successive finishing operations to completion without being placed in rough storage, or, on the other hand, it may be taken to rough paper storage and kept there; being finished from time to time in smaller quantities.

For rough paper made, a Lot Cost Summary Card (Rough Paper) is made out. A description of the paper processed under each lot number is indicated. The stuff cost as explained, is obtained from the Stuff Cost Summary Card. The standard consumption of animal size used in making each lot of paper is calculated, using a rate per 100 pounds of rough paper made. Paper machine, Loft or Air Drying burden is applied and the total cost shown.

A register of Lot Cost Summaries, Rough Paper, is used to collect currently the various items entering into the cost of rough paper. At the close of the period, all columns will be footed, the sheets balanced, and the totals thus obtained used as a basis for a journal voucher.

Lot Cost Summaries Finished Paper

As each lot or sublot of rough paper is drawn from storage, a Finishing Order is issued by the finishing department, bearing a production order number corresponding to the lot number from which the rough paper is drawn. As each order is issued, a Lot Cost Summary card (Finished Paper) is headed up. The quantity and cost of rough paper is recorded from the Lot Cost Summary Card (RP) covering the rough paper cost of the original lot. The quantity and cost of the first lot issued will be deducted from the quantity and cost of the whole lot, the balancing being shown. Similarly, the quantity and cost of each succeeding lot issued will be deducted from the previous balances of quantity and cost and a new balance shown. Thus the cards for lots of rough paper in storage show at all times the quantity and cost of rough paper actually in stock.

Lot Cost Summary cards for lots put through the finishing operations, gather the total direct labor and burden charges and also show the quantities of broke made besides the various sortings. These quantities and cost are then carried to the finished stock ledger.

A register of Lot Cost Summaries, for Finishing Paper, is used to collect currently the various items entering into the cost of finished paper. At the close of the period all columns will be footed, the sheets balanced, and the totals thus obtained used as a basis for a journal voucher.

Cost of Sales

A cost of goods sold register sheet is headed up each period for each grade of paper carried in stock. The quantity, items and invoiced weight of each shipment is recorded currently. At the close of the period these sheets are footed, a recapitulation made, the various grades priced using an average price per pound secured from the Finished Stock Ledger for each grade of paper.

Accounts Payable Register

At the close of the period, the columns are footed, the sheets made that the totals of the footings of the credit columns equal the totals of the debit columns.

Supplies and Miscellaneous Expense Distribution

At the close of the period, the columns are footed and proof balanced and the totals thus obtained used as a basis for a journal voucher.

Payroll Distribution

At the close of the period, the figures appearing opposite each item are cross-footed and the totals entered in the total column to the right, after the footings and cross-footings have been proven they are used as a basis for a journal voucher.

The same pleasant thought applies with equal force to material used registers; construction records; sales analysis; invoice register, and all other tasks of summarization that a modern cost system entails.

At the close of each period, an adding machine (tape) trial balance is taken of the quantities and values of the balances shown on all inventory cards. The balances obtained are used for comparison with the controlling accounts in the general ledger.

The purpose of my paper is to present a method of cost accounting procedure; to summarize, total, cross-foot and bal-

ance currently, the data we have accumulated for the purpose of journalizing.

No claim is made that there is anything new or novel in this method, and the balance deals with some things we have worked out in our plant, which have resulted in considerable savings of clerical effort, time and expense, and at the same time giving more satisfactory cost results.

Use of Accounting Machine

The entire intermediate step of summarization is accomplished by means of an accounting machine. All summary or register sheets are made to conform with the requirements of this device, thus standardizing all working papers and providing a uniformity that heretofore has been lacking.

As lot cost cards are completed, checked and approved, they are posted to the proper summary sheet. The previous totals are "picked up," the current data posted, totaled, cross-footed and balanced at the same time. At the end of each day, the work of the cost department is completed.

At the close of each period, when time is most valuable—and of which we have the least, considering the amount of work to be performed—the footing, cross-footing, balancing, etc., is a task already performed.

It may be interesting to you to know just how our closing is accomplished. At the close of each period the various summary or register sheets are recapitulated, after which an accounting machine trial balance is taken of the inventory cards. Immediately below the trial balance appears the reconciliation of the account, thus insuring the accuracy of the summarization. The journal voucher is made out from the summary sheet and forwarded to the general accounting department. After the trial balance is drawn from the general ledger, the cost department trial balances are compared with the controlling accounts.

This machine performs the intermediate step of summarization most effectively, with gratifying neatness, absolute accuracy, and with a very substantial saving of both time and expense.

The flexibility of our machine is a very valuable feature, especially when applied to cost accounting. Our installation has proved to be entirely successful, and has resulted in many substantial savings besides adding materially to the efficiency of this department.

Standardization During 1925

In the annual review of the development in industrial standardization during 1925, C. E. Skinner, Chairman, American Engineering Standards Committee, gives the following report in part:

"The closing year has shown important developments in the growth of the industrial standardization movement.

"One of the most important of these has been the increase of active interest on the part of industrial executives. A conference of first-line executives, held early in the year, organized a committee from their number to serve as an advisory committee to the American Engineering Standards Committee, and these men are now giving time and assistance to the solving of national standardization problems. Formerly, the matter of standardization has been left largely to the technical man, but it is now generally recognized that standardization is a managerial problem of the first rank.

"Of special interest to the factory owner and manager is the Directory of Specifications, published in August, 1925, by the Department of Commerce.

"In so brief a review the standardization activities of the hundreds of organizations, trade, technical and governmental, cannot be listed. However, the work of the American Engineering Standards Committee is typical of the standardization movement as a whole, since the committee acts as a general clearing house, and each project promulgated under its auspices represents the combined effort of many such organizations. The list of projects now before the A. E. S. C., at various stages of development, totals 218, including 76 approved standards.

"In the field of industrial safety, satisfactory progress has been made on a program of some 40 codes, most of which are applicable to factories. Seventeen of these have been completed, and work on half of the remainder is well advanced. Codes for paper and pulp mills, and elevators and escalators, were completed and approved during the year.

"Standardization on an international scale is still in its infancy; yet through the co-operation of the various national standardizing bodies there has been real accomplishment in several subjects. Of special interest, on account of its relation to the use of specifications in the development of foreign trade, is the First Pan-American Conference on the Uniformity of Specifications, which was held in the first part of January, 1925, in Lima, Peru. It was decided to hold another such conference in the United States within a year or two."

Newsprint from Eucalyptus Successful

Experiments which the Forest Products Laboratory have been conducting to produce print paper from eucalyptus wood grown in the State of Sao Paulo, Brazil, were brought to a successful conclusion on December 29th, when a small roll of the paper was run through the press of the Wisconsin State Journal. The paper showed very favorable printing qualities and ample strength to run in high speed presses.

Dr. Edmundo Navarro de Andrade, who is in Madison observing the experiments, is of the opinion that the successful result of these experiments will usher in a new era in paper manufacture in Brazil, since they make it possible to produce paper at about half the cost of imported newsprint.

The same species of eucalyptus used in the experiment can be grown in California, New Mexico, Arizona, and Florida, where the climate is such that the tree would probably reach pulpwood size in less than ten years.

New Catalogs, Booklets, Etc.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.—"Centrifugal Boiler Feed Pumps" is the title of leaflet 2,082, which describes and illustrates multistage boiler feed pumps and also supplies data with graphs treating on pump capacity for boiler feeding, head required on suction and kindred subjects.

The Cleveland Worm & Gear Co., 3258 E. 80th St., Cleveland, O.—A booklet which displays typical applications of Cleveland worms and gears in operation in different industries. Data are supplied with drawings.

General Electric Co., Schenectady, N. Y.—"Some Developments in the Electrical Industry During 1925" is the title of an article by Mr. John Liston, published in the January issue of the General Electric Review. The complete article, of several thousand words and 103 photographs, is divided into numerous sections of approximately 400 words each, one of which covers paper mills.

Newsprint Service Bureau, 342 Madison Ave., New York City.—A message for 1926 is appropriately entitled, "Prosperity in America." Royal S. Kellog groups the foundations of our past, present and future prosperity, that are deep and enduring, as: racial, economic, political and social. Statistics and other proof of our prosperity is given in a most fascinating and illuminating fashion.

Pennsylvania Pump & Compressor Co., Easton, Pa.—Duplex single stage and two stage compound air compressors are portrayed in a new bulletin which illustrates the bearings, valves, air piston and other parts with separate photographs.

Sumet Corp., 1543 Fillmore Ave., Buffalo, N. Y.—A new booklet pictures the uses and manufacture of Sumet bronze bars. The structure is shown in the use of photomicrographs with a magnification of 50 diameters. A long list of applications is given which includes calenders, pulp grinders and other machines.

Toledo Scale Co., Toledo, O.—Mysterious manufacturing losses, how errors occur and the scope of weighing materials is covered in a booklet recently issued, which is entitled, "The Measurement of Materials."

Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.—The engineering achievements of this company for 1925 are now in booklet form. Outstanding achievements in the entire electrical field are discussed and among these is the rotary contactor type speed regulator for paper machine drives.

News Briefs from Washington

REPORTS from the Consuls and Commercial Attaches of the Department of Commerce received during the past month emphasize the following conditions in the paper industry abroad:

Australia Offers Bounty for Industry.—A recent report from Australia states that the Commonwealth Government has announced that proposals to pay a bonus of £4 per ton on newsprint and other papers manufactured from Australian hardwoods would be submitted at the next meeting of Parliament. Since the announcement of the amount of this bonus, the company, which has applied for assistance to establish the industry, has stated that the amount is insufficient to warrant them proceeding with the project. The bounty desired was £6 per ton as well as higher duties on overseas imports.

In view of the representations made as to the inadequacy of the assistance offered, the interested company has been informed that if a case were established, from further data to be submitted, the Government would consider additional assistance to enable the industry to be established. This the directors have undertaken to do in time for the Government to arrive at a decision before the company's option, on suitable timber areas in Tasmania, expires early in December next.

In the meantime the following public comment by the Minister of Trade and Customs on the situation, and the extent to which the Government is prepared to assist the industry, is submitted:

"The project placed before me was that a paper mill should be erected in Tasmania capable of making up to 20,000 tons a year of newsprint and writing paper from Tasmanian hardwood at a capital expenditure of £600,000 and if the undertaking proved commercially successful consideration would be given to the expenditure of up to £2,000,000 to make the whole of Australia's paper requirements. The many benefits of such an industry as this to Tasmania, and, in fact, the whole of Australia, were so obvious that the proposal demanded the sympathetic and careful consideration of the ministry. There is no duty on newsprint under the British preferential tariff, under which Canada also now benefits. The duty on Scandinavian newsprint is £3 per ton, and the duty on various other papers that could be made is from 5 to 25 per cent. No proved information was available to the ministry regarding the costs, quantities, or qualities of the paper it was proposed to make, and exhaustive world inquiries were made by me regarding costs, processes, and wages, so that the ministry might arrive at a conclusion as to what was required to enable the newsprint industry to be successfully established. The ministry determined that a bounty of £4 a ton, with a deferred duty, would be sufficient assistance to establish the new industry.

"This would amount to the payment of £120,000 a year on the average to support an industry that would pay £200,000 in wages a year, and over the five years would mean an offer to pay £600,000 by the Commonwealth for the establishment of the paper industry. The capital expenditure necessary for the production of 30,000 tons of paper a year would be less than £1,000,000, so that the offer of the ministry was equal to a bounty of £120,000 a year for five years. The ministry was not influenced by the actions of newspaper proprietors, or by anybody else, in coming to their decision, but was actuated solely by a desire to see this valuable industry established."

Brazil Encourages Paper Manufacture.—Vice Consul Eastin, at Pernambuco, Brazil, states that under Law No. 2285 of October 6, 1925, Jose Muniz has been granted exemption for 15 years from all State taxes, except the consumption tax, for the installation of a mill for the manufacture of paper or cardboard of any kind in the State of Ceara. No statement has been made by the engineers in charge as to the time construction is expected to begin or as to the proposed equipment, but it is definitely provided under the law that unless mill operation is begun within three years the concession will be cancelled.

Many Countries Adopting Metric Paper Sizes.—In the November issue of THE PAPER INDUSTRY mention was made of the work already accomplished toward the adoption of standard metric sizes for paper in Norway. It is now reported that these standards have already been adopted by Belgium, Holland, Switzerland, Czechoslovakia, Hungary, Austria, and Germany, and that great interest is being shown in this question by both producers and consumers in Norway with governmental approval an imminent probability. Now that the matter of size standardization appears to be nearing solution, the standardization of quality is also under consideration, the Ministry of Commerce having appointed a committee to consider the problem. The chairman of the Committee is the Keeper of the Record Office, who has for a long time been advocating an improvement in the quality of the paper used in the Norwegian government offices.

A meeting was also held recently in Stockholm by the Standardization Committee of Swedish Industries in order to discuss the possibility of standardizing the sizes of Swedish paper for stationery, newspapers, magazines, and books according to growing international practice. Representatives of the swedish paper and printing industries, stationery dealers, newspapers, the Royal Swedish Board of Trade, and the Government Testing Institute were present at the meeting. It was decided that the Committee should continue the investigation already begun in order to determine what sizes could be recommended for general adoption in Sweden. No date has been set for the submittal of its findings.

Finland Reports Satisfactory Market.—A report from Consul J. F. McGurk at Helsingfors states that the Finnish pulp and paper market is considered satisfactory. The demand for both chemical and mechanical pulps has continued active and many of the groundwood mills have received orders for shipment during a considerable period of 1926, Great Britain and the United States being the principal purchasers of chemical pulp.

Figures covering exports from Sweden, Norway, and Finland during the first nine months of 1925 show a substantial increase in exports of boards from these countries, the total for the three for that period amounting to 67,130 metric tons, exceeding that of the corresponding period of 1924 by 43 per cent. The largest shipments were from Finland, these amounting to 36,971 tons, followed by Sweden with 21,404 tons, and Norway with 8,755 tons.

Commercial Attache Klath, at Stockholm, also reports that complete equipment for a modern paper mill and paper box factory to be built by Swedish engineers at Aigiou, Greece, has been shipped from Goteborg.

Foreign Demand Increases in Czechoslovakia.—Consul General Winans, at Prague, states that the Czechoslovak paper mills were more actively employed up to late November than during the previous month. Foreign orders have increased, a considerable demand for cigarette paper recently having been shown by Turkey. The paper mills are well stocked with pulp.

A cable from the Commercial Attache at Vienna, Austria, states that the Austrian production of paper during October amounted to 17,800 metric tons and that of chemical pulp to 16,000 tons as against 15,000 tons of paper and 14,000 tons of chemical pulp during the corresponding period of 1924.

Two German firms have applied to the State Council for permission to organize a paper company in Finland, the concern to be domiciled at Helsingfors.

Commercial Attache Klath reports that some anxiety over the possibility of losing the British market for wrapping paper is manifested by the Swedish paper interests, since it

is reported that the Parliamentary Commission on duties has recommended that a duty of 33 1-3 per cent be imposed on wrapping papers imported into the United Kingdom. Heretofore Great Britain has been the largest purchaser of Swedish wrapping paper.

How to Measure Degree of Sizing

The Bureau of Standards announces that it has under preparation a new publication which lists, classifies, and briefly describes for the first time under single cover the 30 odd methods of measuring the degree of sizing as applied to paper required for certain specified purposes. Most uses of paper require that it be sized so as to resist the absorption of water, ink, and other aqueous solutions. Some uses require that the degree of sizing be within a definite small range, while others require only a minimum value for good performance. The degree of sizing can be determined in a rough manner without any great difficulty, but the more accurate measurement of this property of paper is another story.

The study of the behavior of paper reveals the fact that resistance to spreading on the surface, as is the case with ink lines, differs from the resistance to penetration through the sheet sufficiently to warrant regarding them as separate properties of paper. Most of the test methods are designed to measure the penetration through the sheet, or the internal or body sizing of the paper. The outstanding feature of the various testing methods is the lack of agreement of their results, the chief cause of the disparity being the neglect of one of the most characteristic properties of cellulose fibers. The fibers of paper selectively absorb materials from solution, so that most of the solutions used in the tests act differently in this respect and measure not sizing alone, but sizing plus the particular absorptive propensity of each paper tested. As a consequence the different methods classify papers in different orders.

The five outstanding methods compared were (1) ink flotation, (2) Okell electrolytic, (3) Stoekigt, (4) curl, and (5) a new indicator method. Numbers 4 and 5 were developed by the Bureau of Standards, and over 60 samples of paper were tested by these methods for comparative study.

British Correspondence

Monthly Report on Paper Industry

During the last month, prospects for trade in the British paper industry have improved. There is less idle machinery and unemployment. Several of the more important Scottish mills have obtained some worth while contracts, but the smaller mills are still in some difficulty. Cheap cargoes of esparto paper have relieved the tension to some extent. Competition is still keen in this section, and owing to the slackness in overseas selling, it has been suggested that the possibilities of American trading might be investigated more fully, as it is pointed out that there are certain classes of esparto printing paper of the better and more characteristic sort that appeal to the American user, whose search is always for something which will improve his product or put fresh character into it. It is pointed out that this is one of the main reasons why some of our handmade mills are able to extend business to America, and that more than one effort has been made to persuade English makers of handmade paper to become interested in a project for establishing a vat mill in the United States.

Book Paper Mills. Woodfree mills have been doing more business recently, but continental competition is still keen, and would be more formidable but for the fact that foreign manufacturers require an extended period for delivery. It is reported that there is a tendency on the part of some of our mills to carry less stock than was their custom before the war, but in view of the tendency to sell direct, which is now becoming fairly widespread, there is no doubt that the mills will find it necessary very soon to carry much more extensive stocks. At present, distributing methods are somewhat chaotic; but it is expected that eventually some of the leading manufacturers will break away and prepare a scheme of selling through an accredited wholesale organization.

Newsprint. With regard to newsprint, it is not considered a good augury that America is reported to be holding a surplus of newsprint which has been disposed of at low cut figures compared with our own. With the Canadian output surpassing the U. S. A. production, British manufacturers anticipate some difficulty in holding the Australian market, a great share of which the Canadian manufacturers have great hopes of capturing.

Fine Papers. There is some slight increase in demand in the fine paper section, but the effect of the lowering of the paper standards has meant that much of the business formerly belonging to this section has passed into the hands of other sections of the industry. Prices are steady throughout the industry for both raw material and finished paper.

The Tax on Wrapping Paper. The committee which has enquired into applications for duty on packing and wrapping papers, under the procedure for the safeguarding of industries, has issued its report to the Board of Trade, and the necessary resolutions giving effect to their recommendations were submitted to the House of Commons.

Fiftieth Anniversary of the Link-Belt Company

Fifty years have passed since the incorporation of the Ewart Manufacturing Company, the forerunner of the present Link-Belt Company, in 1875. In commemoration of the fiftieth anniversary, the Link-Belt Company published an attractive book entitled "Link-Belt 1875-1925," mentioned in the November issue of THE PAPER INDUSTRY.

In this book it is mentioned that the patent of William Dana Ewart, a young implement dealer, from Belle Plaine, Iowa, for the detachable link chain, was dated September 1, 1874. Mr. Ewart first started to build a self-binding harvester, but he realized the great need in such a machine for a detachable chain drive that could be repaired in the field; and he worked out the idea of a chain drive, the links of which could easily be replaced by the farmer, who up to that time had been wasting much time in going back to the barn or blacksmith shop for necessary repairs to the "strap-link" chain drives that were used on some of the first crude binders; or trying to adjust the flat belts, which stretched and tightened under varying conditions of heat or moisture in the field.

In 1874 Mr. Ewart came to Chicago and succeeded in interesting John C. Coonley, a lawyer who was then president of the Chicago Malleable Iron Company. As a result a company was duly incorporated in 1875, under the name of the Ewart Manufacturing Company, for manufacturing detachable link chain.

New uses for the invention developed rapidly, and in 1880 the Link-Belt Machinery Company was incorporated "to design, build, and supply accessory parts, and install elevating and conveying machinery employing Ewart Chains," the plant for this company was built in Chicago.

In 1888 the Link-Belt Engineering Company was formed with a plant in Philadelphia. These two plants found increasing numbers of new uses for the chain, with the result that all three plants continued to grow in size until in 1906 a consolidation of the three interests took place, and Charles Piez elected president.

It will be remembered that Mr. Piez was director general of the Emergency Fleet Corporation during the World War. He is now chairman of the board of directors, and Alfred Kauffmann, formerly vice-president in charge of the two Link-Belt plants in Indianapolis, is president of the company.

Westinghouse Institutes Prime Mover Sales Department

E. D. Kilburn, vice-president and general sales manager of the Westinghouse Co., announced that effective with the new year the prime mover sales activities of the Westinghouse Electric & Mfg. Co. would be conducted by a new sales organization at the South Philadelphia works.

The personnel of this new department is to include the following appointees: Howell Van Blarcom, manager; R. E. Carothers, assistant manager; A. H. Ganshird, manager of large turbine section; C. G. Ong, manager of small turbine section, and P. L. Fetzer, manager of the condenser section of this new department.

Bald Cypress (Taxodium Distichum) Pulp

L. VIDAL

French School of Paper Making, Grenoble, France

Translated from LE PAPIER *xxviii, 985-988, September, 1925, by a Papineau-Couture*

THIS pulp has not yet been used, and is known only for having been prepared in the course of laboratory experiments. The earliest of these experiments are due to H. E. Surface, who consigned his results along with those of numerous other experiments in an all too concise bulletin on "Paper Pulps from Various Forest Woods. Experiment Data and Specimens of Soda and Sulphite Pulps" (Washington, 1912). Fortunately, however, samples of the experimental pulps were included in the Bulletin. As far as bald cypress, or Virginia cypress, is concerned, only the sulphite process was tried out, and the resultant pulp was not bleached. The cooking data are given without any comments, and the author does not give his opinion as to the value of the results obtained.

Through the kindness of my colleague and friend, Mr. Aribert, I have had access to this valuable little book; and quite a number of years ago I had availed myself of the samples which it contained to make a microscopical examination of the pulps. This examination was not devoid of interest; but I had not seen the use of publishing the results, as Professor Hanausek had already done so. A short time after the publication of Surface's work, the German scientist had studied the microscopic structure of the more remarkable pulps which it contained, more particularly that of bald cypress; and he published his findings in 1914 in the Special Number of Der Papierfabrikant.

Witham, in his treatise on "Modern Pulp and Paper Making" (Chemical Catalogue Co., New York, 1920), reproduces an article by Kress, Wells and Edwardes which appeared originally in THE PAPER INDUSTRY and which concisely summarizes the results of a very large number of semi-commercial pulping tests carried out at the Forest Products Laboratory, Madison, Wis., on numerous American pulpwoods. The tests with bald cypress were evidently more complete than those of Surface, for they included pulping by both sulphite and sulphate processes and bleaching tests.

Let us see what can be the value of bald cypress as a paper making material, according to the various authors.

As I have already mentioned, Surface does not give any appreciation. Hanausek is decidedly pessimistic: "From its microscopy there is no doubt that "swamp cypress" pulp is absolutely useless as a paper making material; it could at most be used as a filler stock, but this is hardly advisable as there are other materials much more suitable for this purpose."

Though by no means enthusiastic, Witham is not so contemptuous. The sulphate process gives a pulp with long but tender fibers which could possibly be used as a substitute for white spruce pulp. The sulphite process is not satisfactory; the material is hard to cook, the color and strength of the pulp are poor, and it is hard to bleach. The possible uses of such a product are few.

Without claiming to settle the question definitely when there are so little data to go by, I shall describe the results of my own observations, starting with the sample of unbleached sulphite prepared by Surface in 1912.

The wood used came from the swamps of Louisiana where the tree is quite plentiful and grows to a great height (about 30 meters). The pulp is decidedly brown, being considerably darker than is usually the case with sulphite, and it contained a large number of raw shives which were quite plainly visible with the naked eye. It retained a large proportion of lignin, and zinc chloro-iodide gave a yellowish coloration, especially with the shives. The straightness and stiffness of the fibers, their visible hardness which is quite apparent to the touch, all concur to show that the material was not sufficiently cooked. Moreover, the pulp was not properly defibered; not only are there numberless shives of all sizes, both microscopic and visible with the naked eye, but the fibers have been damaged and broken to such an extent that it is difficult to find any that are whole to measure them. Hanausek attributes this condition to the extreme fineness of the fibers, but I think he is mistaken. In my opinion the condition of the fibers is due to the fact that the stock was raw and hard, which prevented its being properly worked up in the beater.

In spite of these rather unsatisfactory conditions, I was able to find out that the fibers are of about the same length as those of spruce, averaging about 3 mm. Witham indicates 3.3 mm. Hanausek does not give any definite figure, and merely says that the longest fiber he has observed was 3.6 mm. long but that he expects that this is by no means the maximum fiber length. This is borne out by my observations, for I found fibers 4 mm. long.

Structure of Cypress Fibers

As in spruce, there are two kinds of fibers: summer fibers and autumn fibers. The summer fibers, or tracheids, are by far the more numerous. They form broad, transparent, thin-walled ribbons, which are covered with innumerable bordered pits. The width averages about 0.060 to 0.070 mm., but sometimes goes as high as 0.090 and even 0.100 mm., which is appreciably more than the width of spruce fibers. The bordered pits, which are round and show up as two concentric circles, are of the same shape as those of spruce, but are somewhat smaller and especially are much more numerous. They are frequently arranged in three, or even four, longitudinal rows, and moreover fairly often they are arranged evenly across the width of the fiber, giving a very symmetrical arrangement; at other times they are scattered about quite irregularly. The ends of the tracheids are round, not sharp, at times they are irregularly expanded, and, what is more remarkable, they are so frequently bifurcated that this can be considered as one of the distinctive characteristics of the fibers.

There are but few autumn fibers, less than in spruce, which is of importance from the standpoint of the strength of the pulp since the autumn fibers are the stronger. As in spruce, the wall is thick and frequently striated diagonally in both directions. It nearly always has bordered pits, which are much fewer than on the summer fibers, the outer circle being hardly noticeable, while the central hole is elongated into a lenticular slit.

There is nothing outstanding worth noting in the rectangular cells of the medullary rays with their fine pits and resin particles.

On the whole this pulp resembles that of Norway spruce. The fibers are as long, or very nearly, but are not as strong because on the whole, the walls are thinner and more delicate. There is no doubt that this impairs their strength and also prevents them from standing a prolonged beating. It is evident that they would be too fine and delicate to stand up under the very drastic beating required in the manufacture of glassine. Then, there is the question of the color: this pulp is very highly colored.

Such are my conclusions after examining the sample of pulp prepared in the United States laboratory. So long as they remained in my personal notes, I considered them sufficient; but before publishing them I considered it wiser to control them by isolating some of the cellulose myself and examining it.

A Pulping Test

I therefore carried out a small-scale soda pulping test in my laboratory at the School of Paper Making. The wood, it is true, did not come from Louisiana, as I would have liked, but was grown in the Botanical Gardens of Grenoble.

I thus obtained unbleached cellulose, and also bleached cellulose, and very well bleached at that. In experiments carried out on such small quantities and under conditions so different from those prevailing in commercial pulping, consumption of chemicals and yield are quite meaningless. I could not even say if the material was particularly hard to cook, nor did that aspect of the question interest me. I wanted merely to obtain, if possible, an ordinary bleached pulp, comparable as far as possible with ordinary spruce pulp.

This I was successful in doing.

The bald cypress grown at Grenoble gave a pulp suitable for paper making. The microscopical examination offered no difficulties, and I made the most of the opportunity afforded me to complete the observations already made on the less satisfactory material which I had previously handled. I was

thus able to prove to my own satisfaction that the defects of the pulp prepared by Surface were not inherent to the raw material but were attributable mainly to improper and insufficient treatment.

I also made another interesting observation, namely, that the fiber walls from the Grenoble wood seemed thicker and stronger than those of Surface's sample. I am not in a position to say whether this denser structure of the wood is due to slower growth in a colder climate or to the fact that I had to be content with working on wood from a branch in order not to destroy the tree by taking part of the trunk. The fact remains that the pulp which I obtained seemed stronger than Surface's.

In conclusion, I consider that Witham struck the right note. Bald cypress has not the same value as spruce, being too soft and too highly colored; but in many cases it could be used instead of spruce.

Control of Operations in the Pulp Mill*

R. DIECKMANN

IN THE first place the author starts with a discussion of the testing of the water that is used in the mill. He develops the subject of filters and their use to obtain a pure water for papermaking purposes. A description is given of the various tests that are made to determine the purity of a water, which are all of standard character and need no discussion here. The control exercised over the water that is employed in the plant also extends to the water employed in the boiler. Details are given of the various tests that are made to determine the efficiency and economy of boiler operation. The use of recording analyzing meters is recommended. Various other controls in the boiler plant was also described, such as control of the superheaters, of the oil used in the engine, etc.

The next subject to be discussed is the control exercised in the dressing of the wood preparatory to its comminution. The most important consideration here is the determination of the quantity of wood. The figures must be based on the absolutely dry weight of the wood. The control of the barking machine is important in that it is necessary to limit the amount of material removed by it so that no valuable wood goes to waste. This is done by controlling the setting of the barking knives. The adjustment of the position of the knives is of considerable importance in the barking machine and of even greater importance in the chipping machine. For it is essential that the comminution of the wood be as uniform as possible, so as to obtain a proper digestion of the stock in the next step in the pulp-making process.

In the preparation of the digestion liquor, certain chemical control must be exercised. The concentration of the gas evolved from the burning sulphur must be properly regulated, and likewise the temperature of the sulphurous gases. This is accomplished by thermo-electric means. The temperature of the wash water is another important point, and this must be maintained around 65 degrees C. Registering apparatus is used for this purpose. An instrument is available which will record six different temperatures at one and the same time. Chemical methods are described for testing the concentration of the sulphurous gases. The determination of sulphur dioxide and sulphur trioxide in the gases is made with the aid of standard solutions of iodine and thiosulphate. There are also available recording apparatus which automatically analyzes the gas for its sulphur dioxide content and registers the percentages obtained in a continuous curve form. Mention is also made of the control that must be exercised on the lime that is contained in the absorption towers to see that a liquor containing the proper amount of lime is manufactured.

As far as the liquor itself is concerned, a new method has been developed in which the chemical chloramine is employed. This chemical is sodium paratoluol-sulphochloroamide, and it gives accurate results, much more so than what are obtained with the aid of the more expensive chemical, iodine. Details of the method are given in the original article.

*An abstracted translation of an extended paper presented at the meeting of the Association of Pulp and Paper Chemists and Engineers in Berlin, Germany, on March 5, 1925. Published in Der Papierfabrikant, 1925, pages 317-320; 333-336; 353-357.

Control of Digestion Process

As far as the digestion process itself is concerned, there are five points of control that may be mentioned as being essential to the success of the process. In the first place, there is the control of the composition of the digestion liquor. Then there is the control that is exercised to see that the distribution of the steam that is introduced into the digester is correct. Control of the pressure of the steam used, so that it is not too high, comes next, and then follows the regulation of the proper temperature within the apparatus. Finally, as fifth point of control, there is the uniformity of the wood, whose moisture content must be taken strictly into consideration in this connection.

When such control is carefully exercised, the operator is in the point to tell beforehand the quality of the pulp that he makes and also to continue making the same quality of pulp indefinitely as long as the operating conditions remain unchanged.

The control exercised on the waste gases that are evolved from the digester is essentially a pressure control and is carried out in such a manner that during the entire digestion process the pressure within the apparatus is maintained constant. Thus the removal of the waste gases only relieves the excess pressure. Hence, the blow-off valve is not set at such a point that the process "creeps," as it is generally called, but the valve is held open for so long a time until the pressure has fallen to a sufficient degree and then it is closed. The pressure meter may best be controlled by an electrical registering contact manometer, which actuates a signal bell.

It is very desirable to have two manometers, on the bottom of the digester and on the digester itself, which then determines the difference in the height of pressure. For example, the manometers can be adjusted at 5 atmospheres pressure at the level at which the digester is tended and at 4.5 atmospheres pressure at the blow-off level. In this manner there is obtained an accurate control of the pressure conditions within the apparatus. Thus when the blow valve does not open to relieve the pressure as it should, the ringing of the bell calls this to the attention of the operator and the trouble can be immediately rectified.

The progress of the digestion can be determined by taking samples of the digestion liquor and analyzing it by titration with hundredth normal iodine solution. Tests are made rapidly and the results may be immediately plotted in the form of a curve and the progress of the process is then available.

The determination of the sulphur dioxide at a temperature of 120 degrees C. is very important. At this temperature the course of further digestion is determined, which determines the character of the pulp. The Mitscherlich test is used for this purpose because of the technical difficulties of the titration method. In this test, ammonia is added to the digestion liquor, and the greater the resulting precipitate, the more active sulphurous acid is present in the liquor. It has been brought out that it is well to lead the sample of digestion liquor through a cooler before making the test in order to avoid loss of sulphur dioxide. However, in actual practice sulphur dioxide gas is readily detected by its odor, and it is possible for the experienced worker to tell the progress of the digestion by the intensity of the sulphur dioxide odor. A mixture of ammonia and 3 per cent of calcium chloride has also been used, and in this case as well the volume of the precipitate that is formed determines the amount of active sulphurous acid that is present in the liquor.

Mention is also made of the Fleury effect, which relates the color of the digestion liquor with the extent of the action of the liquor on the wood. If a solution of organic matter, which is made up in part of aldehyde compounds, is made alkaline and heated, then the solution becomes colored, changing first to a yellow and later to a brown. Then when the heated colored solution is mixed with a little alcohol, then the change is fixed in a certain sense, as further oxidation cannot take place. (In the original article details are given of the test.)

The test which determines the volume obtained by sedimentation of the pulp water mixture, which was described originally by Schwalbe, is also discussed. The magnitude of the volume of sedimentation affords some idea of the character of the pulp. The details of this test are given in Der

Papierfabrikant, 1925, page 253. The sedimentation volume is taken as the volume in cubic centimeters that one gram of absolutely dry pulp, under the conditions of the test, will assume after a period of 45 minutes of sedimentation. Thus it has been found that easy bleaching stock will have a sedimentation volume of 332 cubic centimeters, while strong pulp will have a sedimentation volume of 380 cubic centimeters.

Determining Pulp Strength

The article also discusses the investigations that have been made in the determination of the strength of a pulp by means of the ball mill. The apparatus constructed by Lampen is very well suited for determining the relative strength of wood pulps. The test is made in the following manner: Fifty grams of the pulp are taken for testing. The pulp is disintegrated and then subjected to a grinding or beating in the mill until a degree of beating of 75 on the Schopper-Riegler scale is reached. Then the beaten stock is made into sheet form, approximately 130 to 160 grams to the square meter, and dried. The tearing length of the paper sample is then determined in the usual manner.

It may be said that when the paper stock is being prepared with digestion liquor, which is as strong as possible, containing at least 0.84 per cent of calcium oxide, and when proper control is exercised of the process, then good results are assured. The assumption that when the digestion is carried out with strong digestion liquors, the yield is greater, cannot be substantiated. The variations that do take place in the yield are so small that they cannot be taken seriously.

It is necessary to watch the digesters themselves to detect faults in the construction and remedy them in time. A good masonry construction will go far towards avoiding trouble with digesters. Care should be taken to look for leaks, and when such occur it is necessary to remove the internal masonry work and expose the metal of the apparatus. It is then sometimes necessary to weld the metal in order to repair holes that have been eaten into it by the digester liquors.

The article also takes up the subject of control of the bleaching operation, which is likewise an important matter. Various chemical tests are used for this purpose, as, for example, the determination of the copper number. Details are given in the original article on the chemical processes involved in making these tests. One method which is of importance determines the residual copper oxide that is left after reduction takes place and not the reduced oxide itself. A method has been evolved by Schandroth which takes only three-quarters of an hour to carry out and which is an improvement on the old method.

A discussion is also included of the methods used in determining the amount of alpha cellulose in the pulp. Mention is made of the methods employed to determine the proportions of rosin and of fatty substances in the pulp.

Considerable space is also devoted to the analysis of waste digestion liquors so as to establish the content of sulphur dioxide, organic matter and the like.

In closing, the author points out that operating control does not stop with these physical and chemical tests, but must include as well the care that is taken of the various machines to see that packings are tight, that repairs are made regularly and the like. He advocates the use of curves to show graphically each day the consumption and production of various materials that are used in the mill, such as digestion liquor, wood, coal, bleaching powder, sulphur, etc.

Ohio C. Barber, former head of the American Straw Board Company, who died February 4, 1920, left an estate of $5,654,035, according to an appraisal filed in New York a few days ago. Mr. Barber owned stocks valued at $2,210,870, and had $2,316,348 in real estate. Among his stock holdings were 11,479 shares of the American Straw Board Company, valued at $803,565, and 2,150 shares of the Diamond Match Company, which he founded, valued at $247,450.

A new concern which has started in the paper trade in New York City is the Lexington Card and Paper Company, of 124 East 110th street. A. Kutin, proprietor, announces that he will carry a complete line of paper, cardboard, and envelopes for the printing trade.

Frank L. Moore

Frank L. Moore, who was president of the American Paper and Pulp Association for the years 1914, 1915 and 1916, was found dead in his room at Hotel Belmont, New York City, on Wednesday afternoon, January 6, where he had registered two days previously.

While best known as one of the former presidents of the association and the former president of Newton Falls Paper Company, at the time of his death Mr. Moore was president of the Westfield River Paper Company at Russell, Mass., in which company he had recently acquired a controlling interest.

His death was not discovered until Karl Becker, with whom he had been negotiating to take over the management of the Westfield River Company mill, had made ineffectual attempts to gain admittance to his apartment.

Mr. Moore had evidently passed away in his sleep, for his body was lying in an attitude of peaceful repose.

Up to three months ago, Mr. Moore had made his home in Watertown, N. Y., but had moved to Springfield, Mass., on taking over the Westfield River Paper Company.

He was active in association movements, and also served several terms as head of the Empire State Forest Products Association.

He was sixty years of age and is survived by his wife, three sons and a daughter. The body was taken to Springfield for burial on Wednesday.

Pacific Coast News

January 2, 1926.

Pacific Straw Mill Opens January 15th

Announcement has been made by the directors of the Pacific Straw Paper and Board Company, Longview, Washington, that their plant would begin to operate on January 15th. Modern in every respect, the capacity of the plant will open at thirty tons daily.

The officers of the concern are: Charles F. Schaub, president; George A. Sweet, secretary-treasurer; Richard "Dick" Clayton, manager; William Battle, superintendent. Mr. Clayton has been a board maker for 39 years and mill manager of many of the country's largest board mills. Mr. Battle is a paper and board man of 33 years' experience, having formerly been manager of a large Ohio board mill.

The grinders of the Crown Willamette Paper Company and the Hawley Pulp and Paper Company, both of Oregon City, Oregon, began operation the thirtieth of November after a shutdown of ten days, owing to low water. About 265 men at the Crown Willamette plant and 125 men on the Hawley grinders were affected by the shutdown.

The International Wood and Sulphite Company, of Seattle, has been capitalized for $200,000. K. O. Feese, Hollister T. Sprague and Ralph A. Graves are the incorporators.

Seattle Chamber Urges Alaska Development

The Journal of Commerce, Seattle, declared after making a survey of the paper trade, that 1925 showed an increase of about five per cent over 1924. A shortage of kraft paper showed during the holidays which the new kraft mill of the Hawley Pulp and Paper Co. is expected to fill.

Indorsing a resolution adopted by the Alaska Committee, the board of trustees of the Seattle Chamber of Commerce has gone on record as urging the Federal Government to give special attention to the early development of the wood pulp and paper industry in Alaska. The resolution declares Alaska has twenty-five billion feet of standing timber suitable for pulp and paper making. Four billion feet of this timber, the resolution states, has been allowed to go to waste.

At New Westminster, B. C., the early establishment of a paper mill was discussed by the city council, a communication from the Canadian Scottish Paper Co., Ltd., being read. The company tendered a check with its letter as a payment on

a city water front lot on the Fraser River, to be used as the proposed site for the plant. The council decided to prepare a by-law to make transfer of the lot to the company possible, but to take no further steps until plans of the company had been received.

Paper Mill Uses Waste

A new industry, the conversion of waste fir lumber into chips for the manufacture of kraft paper, is to be established at Longview, Washington.

A plant adjacent to the west fir unit of the Long-Bell Lumber Company's plants will be started in the near future by the Crown Willamette Paper Company to be in operation by February 1, 1926, employing between 35 and 50 men.

The Long-Bell Lumber Company will supply from 100 to 125 cords per day of fir waste to the new plant where the waste will be reduced to chips and conveyed to open barges in the Columbia River by blower pipe system.

The chips will be taken to Camas, Washington, to the company's mill where they will be converted into pulp to make kraft paper in the new kraft pulp mill now being constructed at that place.

Large Lumber Company Will Erect Paper Mill

A paper mill is to be erected at a cost in excess of $1,000,000, to utilize the waste wood of the Mickle Mills, on North Portland Harbor, construction beginning at once, according to A. W. Miller, vice-president and manager of the George T. Mickle Lumber Company. The capacity of the plant will be about 50 tons of wood pulp paper daily.

George T. Mickle, president of the Mickle Lumber Companies and Mills, recently returned from the east, where, according to Mr. Miller, he completed plans and financial arrangements to provide for the erection of the paper mills. Finances to the extent of $200,000,000 would be available for the plant and for an operating surplus, he said.

The Mickle Mills owns a tract of 25 acres lying on the North Portland Harbor, part of which is already occupied by the mills. It is on this property that the new plant is to rise and while no definite information on the size of the proposed plant could be given by Mr. Miller, he said that the capacity would be 50 tons or more daily of pulp paper.

The Mickle paper plant will be operated at great advantage since it is proposed to use by-products of the sawmill which are now ground and sold for fuel, to supply the pulp and paper mill. Surplus electric power of the sawmill also will be used in operating the paper mill. This surplus was formerly disposed of to the stockyard trolley lines of the Swift meat packing plant and to twenty other industries in the Peninsula district.

Sufficient docking space for the shipping of paper by water will be provided by the erection of additional dock space. The present dock space is 1,000 feet long and it is proposed to double its length.

The plant was formerly owned by the Monarch Lumber Company and was acquired by the Mickle Lumber Company in July, 1924. The plant has been operating continually since that time on an eight-hour shift, producing 300,000 feet of lumber a shift. Hereafter, the mill will be operated double shift, producing about 600,000 feet a day. Approximately 300 men were employed under the single shift and with the increase in production, between 500 and 600 men will be employed, Mr. Miller said. With two shifts working daily, sufficient by-products will be produced for the proposed pulp and paper mills, it is estimated.

Mr. Miller figures that it would require between seven and eight months to complete the proposed pulp and paper mill plant and have it ready for operation.

Handy Chart for Engineers

A convenient chart for the use of engineers who have occasion to calculate quantities connected with the expansion of steam is being distributed by the De Laval Steam Turbine Co. of Trenton, N. J.

The well-known Mollier diagram is printed upon a stiff sheet of Bristol board, attached to which is a scale which can be broken off and used directly for measuring heat available, spouting velocity, pounds of steam per horsepower hour and duty between given pressure limits on the entropy diagram; that is, the chart and scale give these quantities directly for a perfect heat motor.

If the steam consumption of an actual engine or turbine is known, the efficiency ratio is found by a simple division. The quality of the steam at the end of a perfect expansion or at the end of actual expansion of known efficiency or steam consumption is also read off immediately from the chart. Copies will be sent upon request.

New York City News

January 2, 1925.

Paper Stock Dealers Elect

Charles A. McBride, of the Wilson Paper Stock Company, Inc., was re-elected president of the Associated Dealers in Paper Mill Supplies of New York, Inc., for the ensuing year at the annual meeting of that organization held in Conte's Restaurant, Lafayette street just off of Astor Place, on the evening of December 9. Joseph Benedetto, of D. Benedetto Company, was again elected vice president; Alfred J. Moran, of A. J. Moran & Company, was again chosen secretary, and Walter E. Martens, of George W. Miller & Company, Inc., was re-elected treasurer. The following were elected to compose the Board of Directors of the association: Joseph V. Carrano, Michael Stramiello, George Carrizzo, J. J. Patricof, Joseph P. Gaccione, Louis Darmstadt, Dominick Palmieri and Charles A. Matronardi.

Plans are being made for the annual dinner of the association, which will be given as usual this year during the week the American Paper and Pulp Association holds its convention in New York, the date decided on being the evening of February 24 at the Hotel Commodore.

Edward W. Wade

Edward W. Wade, a member of the sales staff of Coy, Disbrow & Company, Inc., paper jobbers of 311 Canal street, New York, ever since that firm was established four years ago, and a member of the selling staff of Coy, Hunt & Company, Inc., about 20 years prior to that time, died November 24 at his home at 255 Pearl street, Brooklyn, N. Y. He is survived by his widow and four children.

Hans Lagerloef, of the Lagerloef Trading Company, Inc., wood pulp importers of 52 Vanderbilt avenue, New York, accompanied by Mrs. Lagerloef, sailed December 9 on the motorship Gripsholm for Gothenburg to spend the holidays in Europe.

Link-Belt Company Announces Changes

A new position—that of chief engineer—has been created by Link-Belt Company. W. W. Sayers, formerly chief engineer of the Phiadelphia plant, fills the new position with headquarters at the Chicago office.

The management of the Philadelphia plant will be taken over by George L. Morehead, who for the past 6 years has been attached to the management of the several Indianapolis plants.

R. C. Kendall will be in charge of the branch office which has just been opened in the First Wisconsin National Bank Building, Milwaukee.

Electro Bleaching Gas Co. announces the promotion of Wm. J. Weed to the position of assistant manager of sales. Mr. Weed has been a member of the Electro Bleaching Gas Co. staff and their associate company, Niagara Alkali Co., for the past thirteen years, and for six years has devoted almost all his time to the pulp and paper field.

Announcement has been made of the merger of the Stuebing Truck Co., Cincinnati, O., and Cowan Truck Co., Holyoke, Mass., manufacturers of lift trucks and platforms under their respective names. The name of the new corporation is the Stuebing-Cowan Co.

The National Distribution Conference

Elimination of Economic Waste Is Big Subject of Second Conference

THE guns of the National Distribution Conference, which met for the second time on December 15 and 16 at the United States Chamber of Commerce in Washington, were leveled practically entirely at the elimination of economic waste in placing goods destined either for consumption or further production in the hands of the consumer. The conference was held for the purpose of discussing and acting upon the reports of the six committees created at the first conference held last January. The proceedings, as planned by the Steering Committee of the Conference were carried out under the chairmanship of Theodore F. Whitemarsh of Francis H. Leggett & Co., of New York, who was also chairman of the committee. Other members were G. S. Brown, of the Alpha Portland Cement Co.; R. R. Ellis, of the Hessig-Ellis Drug Co.; F. M. Feiker, of the Society for Electrical Development; A. L. Filene, of William Filene's Sons Co.; R. E. Kennington, of R. E. Kennington Co.; R. P. Merritt, of the Sunmaid Raisin Growers; J. P. Orr, of the Potter Shoe Co.; Stanley Resor, of the J. Walter Thompson Co.; L. D. H. Weld, of Swift & Co., and A. E. Dodd, secretary of the conference.

COMMITTEE REPORTS

During the first day of the conference the reports of four of the six committees were presented for action or further discussion. After opening addresses by Mr. John W. O'Leary, president of the chamber, and Chairman Whitmarsh, the report of Committee No. 1, regarding the collection of business figures as a means toward accomplishing economies in distribution, was read by Committee Chairman Owen D. Young, of the General Electric Company. Following a short discussion it was submitted to the Resolutions Committee for final shaping.

The Collection of Statistics

The report of Committee No. 1 was divided into three sections: (1) The discussion of basic factors affecting the collection of statistics, (2) a preliminary survey of our present sources of distribution statistics with the conclusion that more complete information is necessary before an intelligent examination can be made, and (3) a presentation of the methods of procedure already in operation for the collection of statistics in certain fields.

Reducing Losses from Returns, Delays, etc.

Chairman A. Lincoln Filene submitted the report of Committee No. 2 discussing methods for the reduction of losses due to returns of merchandise, delays in delivery, and cancellations; the improvement of credit practices; the observance of higher ethical standards in business; and the collection and communication of information on trade practices through a central organization embracing all trades; and the promotion of informal arbitration as opposed to litigation.

Market Analysis

Committee No. 3, considering the problem of market analysis, presented its report through Chairman Stanley Resor. Its purpose was to consider methods of avoiding duplication of effort by co-ordinating the work of those engaged in research, and to work out a plan whereby special studies may be assumed by various individuals and organizations, in order to increase the practical value of market analyses and widen their range. Important phases of advertising were discussed in detail as a guide to advertisers in their policies.

Costs of Distribution

Committee No. 4, under the Chairmanship of Robert R. Ellis, conducted a study of the costs of distribution for the purpose of determining the extent to which uniform classification of accounts have been adopted by distributors, the costs of doing business in different kinds of establishments, a means whereby distributors can be persuaded to adopt adequate cost records in greater numbers, the effect of simplification and turnover on the cost of distribution, and the cost of failures in connection with credit problems. Attention was also given to the matter of intangible costs which are known to exist but the proportions of which are unknown or unobtainable.

Methods of Distribution

Beginning on Wednesday morning at 10 o'clock, the report of Committee No. 5 was submitted by Chairman L. D. H. Weld and was concerned entirely with methods of distribution as they affect each other and the general public. There was some informal discussion of the committee's conclusion that present channels of distribution which are the results of competitive trading have resulted because of their economic justification. Referring to installment selling, Mr. Sidney Anderson stated that the unrestricted enlargement of credit through installment selling should be approached cautiously because such credit is to a great degree frozen. The report as read appeared to lead to the conclusion that the public has, since 1920, been educated to pay for service and that the actual cost of goods has become a secondary item.

General Conditions Affecting Distribution

The reading of the report of Committee No. 6 on general conditions affecting distribution by Chairman G. S. Brown was the cause of a display of verbal fireworks owing to what appeared to be an open attack on the Sherman, Clayton, and Federal Trade Commission Acts. A motion was made and passed to resubmit the report of this committee for further consideration, largely because of those parts dealing with resale price maintenance, the regulation of private business, and inconsistencies occurring within the body of the report itself.

Secretary of Commerce Herbert Hoover opened the afternoon session with a short unprepared speech in which he said that if the work of the conference resulted in the determination of some method of eliminating the waste that had heretofore seemed to be inherent in present means of distributing merchandise, much good would have been accomplished and these results would be welcomed by everyone.

Resolutions

The following resolutions were finally submitted by the Chairman of the Resolutions Committee and adopted by the conference without extended discussion:

Resolved (a) That Committee 1 of the National Distribution Conference should be continued for the purpose of conducting a thorough study into our present sources of statistics on distribution—classified by source, by commodity and by character.

(b) That the Chamber of Commerce of the United States be requested to establish a permanent committee on the collection and publication of commercial statistics.

(c) That Committee 1 continue in operation until superseded by the corresponding committee of the Chamber of Commerce of the United States.

Resolved, That Congress be requested to authorize the Bureau of the Census and to provide the necessary funds to conduct an enumeration of distributors of various classes, and as soon as practicable, a census of distribution comparable with the biennial census of manufactures, the value of which is recognized generally.

Resolved, That the need for quantity statistics in the biennial census compilations be communicated to the United States Department of Commerce with the request that volume

WE EXTEND A HEARTY HAPPY NEW YEAR GREETING TO ALL OUR OLD AND NEW FRIENDS ~ MAY 1926 BRING MANY OPPORTUNITIES TO US BOTH TO SERVE OUR FELLOWS

Lobdell Car Wheel Co.

WILMINGTON, DELAWARE

Manufacturers of

Complete Machine Calenders—Chilled Iron Rolls—Roll Grinding Machines —Micrometer Roll Calipers

statistics be gathered, and so far as possible, distribution expenses be segregated.

Resolved (a) That the constructive work being undertaken by trade associations in the collection of data on distribution be approved as the basis of more intelligent study by each group of the elimination of waste.

(b) That editorial discussion by business journals of the need for basic statistics be commended as in the public interest.

(c) That the value of the present "Monthly Survey of Current Business," published by the Department of Commerce, is recognized and that its field of usefulness should be extended so far as practicable by a further classification of the figures of production and of distribution, either through government or trade association sources.

(d) That the value of the statistics of distribution prepared by the Federal Reserve Board and its regional banks is such that business men, individually and in associations, are urged to familiarize themselves with this statistical inquiry and co-operate in its development.

(e) That in order to promote better bases of comparison, all those engaged in gathering statistics are requested to support the efforts of such organizations as the American Economic Association and the American Statistical Association to simplify and to standardize their procedure.

Resolved (a) That in order to define unmistakably practices upheld by a code of ethics, examples of violations should be stated.

(b) That trade associations, chambers of commerce and other organizations affiliated with business should adopt means to uphold and make more effective their principles of business conduct.

Resolved, That all business organizations are urged to provide means for the conciliation or arbitration of disputes between the members of their organizations and between their members and non-members.

Resolved, That the President of the United States Chamber of Commerce be requested to appoint a committee to constitute a Joint Trade Relations Committee formed of representatives of manufacturers, wholesalers, retailers, and the consuming public, to act as a clearing house for complaints of objectionable and destructive practice and to promote such co-ordination as will effect economies and improve mutual relations.

Resolved, That we commend the efforts of the Division of Domestic Commerce of the United States Department of Commerce in cataloging existing researches relative to marketing, and recommend that this work be kept up to date and made available for the public.

Resolved, That it is the consensus of this Conference (a) That the only safe basis for advertising and marketing plans is an accurate and adequate knowledge of where and what the market is and the means by which it can be reached most economically and effectively.

(b) That existing wastes in advertising result in large part from lack of marketing information, from unintelligent direction and from poor correlation of advertising with the sale of the product.

Resolved, That a permanent Market Research Planning Body is desirable to forward marketing research projects of common interest and to co-ordinate present facilities so far as possible.

Resolved, That the general use of the "Plan of Standard Colors, Hatchings and Ben Day Stipples" approved by the Conference is recommended in the preparation of charts and graphs.

Resolved, That individual distributors should educate consumers on the costs of services so that needlessly expensive services may be avoided or properly compensated.

Resolved, That trade and commercial organizations and the trade press should further the adoption of uniform classifications of accounts in order to increase efficiency and facilitate cost comparisons.

Resolved, That the Conference expresses its accord with the efforts of the National Association of Credit Men, the American Institute of Accountants and other commercial organizations to repress dishonest failures. It urges business men throughout the United States to co-operate in this effort.

Resolved, That the Conference commends the amended rules of procedure of the Federal Trade Commission and hopes the present practice will be continued.

Resolved, That "the public interest" is all embracing: Workers engaged in production and distribution, with their dependents, form a large part of the consuming public. They are affected beneficially or injuriously by that which benefits or injures production and distribution; these effects as certainly react favorably or unfavorably on all others of the consuming public. The interest of the whole public is inseparably linked with the interests of all important parts of the public.

Resolved, That the attention of the Secretary of Commerce be called to the need for unification, simplification and uniformity of weights and measures in the various States and throughout the United States.

Resolved, That widespread information of the public on the processes of distribution is needed urgently. The need is called to the attention of the Chamber of Commerce in the hope that suitable means may be devised to advance this desired end.

Resolved, That the President of the Chamber of Commerce of the United States is requested to appoint a committee of distributors to co-operate in the efforts of the American Bar Association and the National Conference of Commissioners on Uniform State Laws to advance uniformity and model State legislation affecting distribution.

Resolved, That commercial bribery is condemned and business men and their organizations are urged to support the efforts of the Commercial Standards Council and others to secure federal legislation and uniform legislation in the several states to stamp out this practice.

Resolved, That the Conference, without prejudice, suggest to the United States Chamber of Commerce that it should determine the advisability of conducting a comprehensive study of installment selling, particularly—

1. The effect upon the general credit structure as well as the cost and the safest methods of financing installment sales;
2. The approximate extent to which the installment buying public is committed to future installment payments in relation to its current income;
3. The probable effect on the consuming public and business of further extension of installment selling.

Resolved, That large aggregations of capital, intelligently administered, and under proper regulation, are capable of rendering a valuable economic service and should not be discriminated against when their operations are in the public interest.

Resolved, That this Conference requests the Board of Directors of the Chamber of Commerce of the United States to give early consideration to the wisdom of action by the Chamber looking toward advocacy of the amendment of the Sherman Anti-Trust Act, the Clayton Act, and the Federal Trade Commission Act.

Resolved, That all business men be urged to advance where possible the promulgated aims of the Conference and apply these procedures in operating their own businesses.

Sportsmen Contend for Prize

That a new impetus will be given to reforestation in New York State is shown by the number of sportsmen's organized clubs that have signified their intention of competing for the Whipple Reforestation Cup.

The cup is being given by James S. Whipple, former Forest, Fish and Game Commissioner, for the purpose of stimulating interest in reforestation and thereby providing more game cover for the wild life of the state.

The Manitowoc Engineering Works, Manitowoc, recently shipped six different tanks to the Calcasieu Sulphate Paper Company, Elizabeth, La., which are to be followed with the shipment of an incinerator and water jacketed blow pipes. The equipment is necessary in the company's plan of expansion.

USE YOUR RESERVE FUND to REPLACE *obsolete* MACHINERY

ONE of the outstanding benefits of the income tax system as applied to paper mills is the education it has given regarding the matter of establishing reserve funds for depreciation and the replacing of obsolete equipment. The proper utilization of this fund has accomplished exceptional results in many fields and paper makers are becoming more and more imbued with the idea that immense benefits can accrue to them in replenishing their old equipment with modern machinery.

The economy of junking obsolete machinery is evident. Millions of tons of coal, valued at over thirty million dollars, were saved the railroads last year principally because of the retirement of old locomotives and the substitution of more efficient and modern types. What holds true with the railroads and other industries holds true also with the papermaking industry. Many mills tenaciously cling to old equipment and do themselves a decided injustice by failing to utilize the low-cost modern machines for the excessive upkeep of the old, whose production per hour is far below modern standards.

Your reserve fund for obsolescence and depreciation can be utilized to good advantage now by having installed the modern "New Beloit Fourdrinier," a machine that has revolutionized production records and low-cost performance.

	1924	1923
Balance forward..	$1.060,302.09	$1.011,650.57
Less Fed. taxes...	44,436.88	61,356.46
Profits	$1.015,865.21 574,657.29	$950,294.11 594,257.96
	$1,590,522.50	$1,544,552.07
Appropriations—		
Depreciation ...	$208,584.98	$200,065.53
Patents	24,996.23	24,511.20
Pref. dividends....	24,930.50	29,975.75
Common dividend..	236,905.00	229,697.50
	$495,416.71	$484,249.98
Bal. carried for..	1,095,105.79	1,060,302.09

Get the facts. Send for Bulletin No. 9 now.

The NEW BELOIT FOURDRINIER

Beloit Iron Works **Beloit, Wis., U.S.A.**

SINCE 1858 BUILDERS OF PAPER, BOARD MILL AND CONTAINER PLANT MACHINERY

New England News

January 1, 1926.

General Condition Good

1926 opens in New England with paper mills moderately active, the outlook in the Connecticut Valley improving, the echo of Receiver Willson's words in his annual report having hardly died away, a report that gives promise of future financial health if not prosperity for the largest fine paper company in the world. The book paper mills of New England are averaging close to 90 percent of capacity, and despite keen competition the outlook for the board industry is encouraging.

The low price of waste paper, despite its ill effect on the paper stock trade, has proved of great benefit to manufacturers of fibre shipping cases such as Bird & Son, Inc., and to paper carton manufacturers who are making greater gains continuously in their sweep which promise to eliminate the wooden box as completely as it is practicable to do so.

The Uncas Paper Board Co. of Norwich, Conn., one of the sore spots of New England Paper Industry, continues to remain something of a problem but the outlook for a satisfactory future is better than since Mr. Smith took the Company over some four years ago. Creditors have been requested to select one of three alternatives and creditors representing some $430,000 of the outstanding $520,000 indebtedness have approved the program presented. Under these plans, creditors would be given first preferred stock of the reorganized Company and would be obliged to buy mortgage bonds sufficient to pay those creditors desiring to accept plan B. Under the second plan, creditors electing its provision would receive 15 percent of their total claim in cash. Plan C provides for those who refuse either of the first two and merely distributes common stock pro rata.

The action on the Uncas mill was precipitated by the order of the Federal Court at New London, Conn., demanding that the Uncas mill be sold for not less than $300,000. Faced with this contingency, creditors desirous of saving something of their claims proceeded to vote the above outlined plan.

As outlined by Mr. Frank W. Browning, the able receiver, it places a very small obligation on the creditors to purchase the mortgage bonds and each buyer will take only his relative share based on the relation of his claim to the approximate 500,000 total.

Receiver Browning is an optimist. Despite the fact that last summer large paper board manufacturers endeavored to purchase the mill with the ostensible purpose of dismantling it to remove a competitor, whose existence they conceived to be unnecessary, Mr. Browning believes that with the expenditure of $350,000 and providing sufficient beater capacity, the company could produce 200 tons of board daily, or 150 tons of test liner, and that a property worth in the vicinity of $2,000,000 would result.

Receiver Asked for Cole Paper Company

The W. A. Cole Paper Co., of Putney, Vt., has been petitioned into receivership by the chief stockholders, Mrs. Flora P. Cole, widow of the late W. A. Cole, and the late Mr. Cole's daughter, Mrs. Jennie Pember, to protect the assets of the company. The Federal Court at Brattleboro has appointed Judge Arthur P. Carpenter as Receiver, and Mr. Carpenter will handle the affairs of the Company with C. A. Poland as manager of the mill. A petition has recently been filed in the Probate Court at Bellows Falls by Mrs. Pember and her daughter, requiring H. C. Warnock to render an accounting of his trusteeship under the will of the late W. A. Cole. Further action against the company has been taken by creditors who brought an action in Bankruptcy against the firm. The Court ordered the company to appear on December 28 and show cause why it should not be adjudged bankrupt. It is believed that creditors are satisfied with the receivership as at present constituted. Just prior to this action, the Vermont People's Bank of Brattleboro, who hold mortgages of some $40,000 against the plant had decided to take it over under the mortgage indenture but had been forestalled by certain officers who refused to surrender the company's mail. The Federal Court in appointing Judge Carpenter receiver ordered the officers to surrender all assets to the receiver and Mr. Poland, and enjoined them from interfering with the operation of the company.

It is believed that under Mr. Poland's skillful management, the mill, which manufactures a line of tissue and toilet papers, will work out its financial salvation. The company's liabilities, in addition to mortgages, total about $16,000.

William F. Whiting of the Whiting Paper Co., has been honored again by the citizen of the Paper City. He was recently re-elected President of the Holyoke Public Library.

Anchor ice, the worst in the experience of engineers of the Holyoke Water Power Co., tied up a portion of the paper mills of the famous city on the winding Connecticut, during the severe cold snap of December. Among the mills affected were the Linden, Dickinson, Parsons, and Crocker-McEl Wain. The river froze above the dam and the ice piled up on the day following the heavy freeze in the first canal. It is expected a boom will be constructed above the Holyoke dam to care for this condition.

The Holyoke Water Power Co. has secured permission for filling in a tremendous tract of land above the city which will be available for industrial purposes.

Power Expansion at Holyoke Assured

Expansion of the Holyoke Water Power Co. is now assured. A $2,000,000 addition to the hydroelectric power resources of the city, insuring the fine paper industry of that city future low cost power for all possible expansion, is now ready to be started. Plans for the new station have been filed at the State House in connection with the securing of a state permit for the construction.

It is expected that the new plant will be built on the Holyoke side of the river, but President Barrett of the company declares that the advantages of the new plant being in Holyoke would be more than offset if the present method of taxation of hydroelectric property in Holyoke was continued.

Other power developments of New England which are of utmost import include the recent announcement of the New England Company, of the merger of interests in the huge New England Power System. This will include power sites throughout all New England states except Maine and will include important sites and resources of the International Paper Co. The New England Company of Boston, controlling this great merger, is a holding company. Recently, it issued $20,000,000 new stock. Of this the International Paper Co. took some 86,000 shares. Most of the remainder went to the Power Corporation of New York and Stone & Webster Co., of Boston. Practically every important power development already underway, planned or at present supplying energy is contiguous to paper mill towns or centers.

Deaths Take Four

Garret Schenck, Jr., son of the President of the Great Northern Paper Co., died at his home in Newton, Mass., on December 6th. Mr. Schenck was a popular figure in the company's great development and left as a monument in its organization, the Mill Bureau of Economy at Millinocket, which he founded and managed for a time. He was educated at Williams College and Massachusetts Institute of Technology. The company observed his funeral hour by suspension of all possible activities. He is survived by his parents, widow, child, two sisters and a brother.

A Willard Case, 85 years of age, president of the Case Manufacturing Co. and treasurer of the Case Brothers Co., well known paper mills of Connecticut, died at his home in Manchester, Conn., on December 24th. He was formerly an international figure in the specialty rope, jute and board manufacturing field. His knowledge of paper making was unlimited and his success was continuous. He was highly regarded by all with whom he came in contact and his passing, despite his age, was a great shock to his friends. He was of the 8th generation of the Case family which came to these shores from Aylsham, England. His parents were

What the Filling Station Can Teach You

Filling stations have learned that they can't afford to sell their oils from drums or barrels—*they lose* too much money thereby!

Drums and barrels inevitably leak at spigots or around barrel-pump joints; there are additional spillage losses, for the oil can't drain back into the drums; time is lost, because barrel pumps are slow; measure is inaccurate, because of the poor equipment; oil is dirty, because storage is not dust-proof.

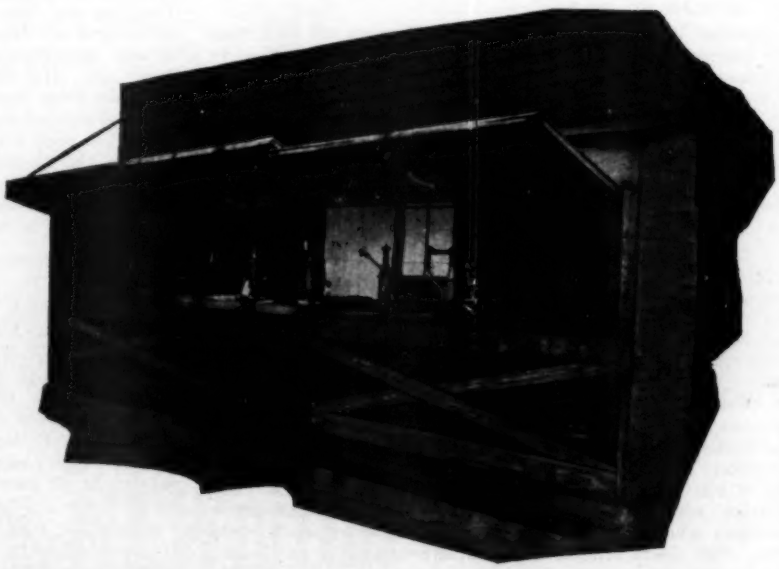
These *facts* are worth thinking about. If the expert operator, specializing on oil and gasoline service, loses money when he handles oil from drums and barrels, what will happen in your plant? Can you expect to get by, when the experts can't make it go? No sir, you can't!

If you expect to avoid losses on your oils, if you want clean oils always, there's just one way to handle them—through the very same sort of oil handling equipment the good filling stations and garages use so satisfactorily: sturdy, dirt-proof, leak-proof tanks; pumps that are accurate to the last drop.

We'd be glad to send you the same folder that hundreds and thousands of filling station operators have read with profit. It talks about *selling*, rather than merely *storing*, oil—but it will get over to you the big idea, which is: *it pays to handle your oils carefully*.

Ask any Bowser man or address Dept. 3 at the home office.

NOTE: Do not construe this advertisement as saying that all filling stations and garages which sell oils from barrels and drums, such as are here illustrated, give short measure or serve you dirty, dusty oil. We don't say that at all—we do say that the one way to be *sure* of getting full measure of clean oil is to buy from stations that use correct equipment.



S. F. BOWSER & COMPANY, Inc.

Dependable Pumps and Tanks

FORT WAYNE, INDIANA, U.S.A.

Charles and Mary Ingalls Case, and it is understood his father was active in paper making before him.

Walter O. Whitaker, of Natick, Mass., general manager and purchasing agent of the Natick Box & Board Co. for the past 13 years, died January 3rd, at the Corey Hill Hospital, Brookline, where he had been a patient for three months. Mr. Whitaker was born in Uncasville, Conn., in 1868, and was early interested in paper making at Norwich, where he later became a paper mill manager. For some years, he was in Utica, N. Y., whence he came to Natick. He was a member of the New England Purchasing Agents' Association.

Isaac B. Mumford, president of the St. Croix Paper Co., although of recent years a resident of New York city, died recently at Pasadena, Cal., after a long illness. He was born in 1856, graduated from Harvard in 1877 and after leaving college entered the paper business at Pepperell. From there he went to Haverhill, Mass., where with others he organized the Haverhill Paper Co., of which he was treasurer until it was sold to the International Paper Co. in 1899. In 1884 he was one of several who organized the Glen Paper Co. of Berlin, N. H., which he managed until it was sold to the International also. In 1903, he was instrumental with associates in forming and building the mills of the St. Croix Paper Co. at Woodland, Me., with general offices in Boston. He became vice president and then president of this corporation. He is survived by his wife and two daughters, one daughter having died.

No action has been taken at this date by the St. Croix Paper Co. to fill the vacancy.

The Maine lumber and pulp manufacturers are up in arms over the recent edict of the Department of Labor which annulled permits of Canadian lumber and pulpwood cutters to enter the United States for work. It is pointed out by the Maine men that native labor is inadequate and the Canadian besides being available, is cheaper and not infrequently more skillful.

Ice, which did not become thick enough, caused much trouble along the Penobscot River, to the many pulp and paper mills during the month of December. This moving ice piled up, caused water to back up into power houses and generally interfered with operations. Thanks to its splendid auxiliary steam power, the Penobscot Chemical Fibre Co., at Great Works, Me., was one of those which passed through the period without the slightest interruption to its production.

In Tribute to Great Newspaperman

One of the greatest newspapermen of recent American history who was, incidentally, a paper mill official and owner as well, Solomon B. Griffin, of the Springfield Republican, died early in December. The mills of the Hampshire Paper Co., of which he was president and the Carew Mfg. Co., of South Hadley Falls, of which he was a part owner, were closed in respect to his memory.

For many years, Mr. Griffin was managing editor of the Republican during a period in which the paper's nation-wide fame was achieved, a fame that it has held for reliability, and general excellence to this day. Many leading paper makers were present at the services, which were held at the South Congregational Church in Springfield.

Fred A. Leahy, vice president and sales manager of the Eastern Manufacturing Co., spent Christmas on the high seas. He sailed on the Minnetonka on December 19, 1925, for a flying business trip to France, Italy, Belgium, England and the Scandinavian Countries.

Connecticut Superintendents to Hold Meeting

The Connecticut Valley Division of the American Pulp and Paper Superintendents Association will hold the first 1926 "get-together" meeting at the Hotel Nonotuck, Holyoke, Mass., Saturday, January 16th. A business session will open at two o'clock in the afternoon, which will be known as Brown Company Day. Representatives of the Brown Company will be present and give a talk on their products.

Ladies are invited to be present for the evening, which will be devoted to a banquet starting at seven o'clock, followed by an entertainment and then a dance.

Warren Speaks on Power

Speaking before the Affiliated Technical Societies of Boston last month, Joseph Warren, mill manager of the S. D. Warren Co., gave a clear idea of power requirements of paper mills. Mr. Warren outlined the greatness of the paper industry in his opening remarks. He then proceeded to prove that rated on a basis of investment and number of employees, paper mills consume more power than any other industry. The power requirements of a news mill, he explained, are about 70 K. W. per ton of paper, 80 per cent of which is required in the process of grinding the paper. This means that the cost of power in manufacturing mechanical pulp is roughly $8.40 per ton, he said.

In book paper making, the beaters require 21 K. W. per ton of paper, the paper machine 2½ K. W. per ton, in miscellaneous operations 3 K. W. per ton, and in bleaching 5.2 K. W. The total for a book paper mill, including other power requirements, he placed at 38 K. W. per ton of product.

Steam requirements are heavy, he showed. In the soda pulp process, 4,200 pounds of steam are required per ton of paper—on the paper machine, 6,000 pounds of steam per ton; in the coating mill about 1,600 lbs. per ton; and in other processes about 1,000 pounds. Radiation is a factor—some 3,900 pounds for each ton of paper must be allowed. This, he estimated to mean that the steam requirements of a paper mill equalled about 24,000 pounds outside of motive power or 1½ tons of coal to every ton of paper.

American Writing Submits Annual Report

Annual report of the American Writing Paper Co., for the second year of its receivership, has been filed by Sidney L. Willson, receiver with the Federal Court at Boston. The receivership has been signally successful. Controllable expenses have been materially reduced for the two years in noteworthy fashion. In 1925, shipping, selling and administrative expenses were kept down to 4.18%, 3.77% and 1.71% of the total. These compared with a typical pre-receivership year, 1922, 5.10%, 4.62% and 2.53%.

Gross profits for the year 1925 as reported by Receiver Willson, (for the year ending October, of course), were $1,158,489 compared to $1,164,000 during the previous year and compared to $742,000 and $842,000 for the two pre-receivership years.

Returns and allowances were $159,000 in 1925, and $157,000 in 1924, but during the two previous years they were $217,000 and $316,000. The selling cost was $737,000 in 1925, and $670,000 in 1924, the increase this year being due to the intensive sales campaign. These are substantial reductions, however, from pre-receivership years when they were $1,086,000 and $919,000. There has been improvement in the economical expenditure for administration, the cost this year being $237,000, and $288,000 and $350,000 during the years prior to receivership.

Sales in 1925 were $13,845,000 and the net loss after taxes, etc., was $369,000. This compares with $14,151,000 last year with a loss of $289,000. These losses, however, have been materially reduced, since receivership, despite acknowledged dullness in the fine paper industry and a great increase in rag costs, according to Mr. Willson.

All current expenses have been paid from current receipts, only back taxes to the amount of $450,000 being met by receiver's certificates which were sold at par. A cash balance of over $400,000 has been maintained during 1925. Nearly $1,000,000 has been spent for rehabilitation of the property and $1,149,000 on maintenance.

New lines have been established during the past two years with distributing service houses to the number of 67 with other merchants 495, and with converters 120, with foreign distributors 120.

MORSE SILENT CHAIN DRIVES

THE MORSE "ROCKER JOINT"

80 H.P. Morse Silent Chain Drive from motor to 2 Jones Type Beaters.
Speed Reduction—Driver, 460 r.p.m., Driven 85 r.p.m.

Severe Duty in Driving Beaters

Meeting severe starting requirements and at the same time effecting space economy and convenience of application, Morse Silent Chains have proved to be ideal drives for beaters. They are dependable, efficient and especially effective on short centers.

Over 4,000,000 H. P. in use, one tenth to 5,000 H. P., 6,000 r.p.m. to 250 r.p.m. and slower. Many drives operating 15 to 20 years are still giving economical service.

The nearest Morse Engineer is always available.

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BALTIMORE, MD.....1402 Lexington Bldg.
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BOSTON, MASS.....141 Milk St.
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CHICAGO, ILL.....113 W. Adams St.
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DENVER, COLO.....211 Ideal Bldg.
DETROIT, MICH.....7601 Central Ave.
LOUISVILLE, KY.....516 W. Main St., E. D. Morton Co.
MINNEAPOLIS, MINN.....413 Third St. Strong-Scott Mfg. Co.
NEW ORLEANS, LA.....521 Baronne St. A. M. Lockett Co.
NEW YORK, N. Y.....50 Church St.
OMAHA, NEB.....727 W. O. W. Bldg. D. H. Braymer Equipt. Co.
PHILADELPHIA, PA.....903 Peoples Bank Bldg.
PITTSBURGH, PA.....Westinghouse Bldg.
SAN FRANCISCO, CALIF.....Monadnock Bldg.
ST. LOUIS, MO.....2127 Railway Exchange Bldg.
TORONTO, 2 ONT., CAN.....50 Front Street, E. Strong-Scott Mfg. Co.
WINNIPEG, MAN., CAN.....Dufferin St. Strong-Scott Mfg. Co.

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Canadian Section

Montreal, Jan. 1, 1926.

Canada Mourns the Loss of One of Its Grand Old Men

Canada mourns today the loss of John R. Booth, multi-millionaire lumber king, railroad builder and papermaker, who passed away at his home in Ottawa on the 8th of last month. Mr. Booth, who was in his ninety-ninth year, can truly be described as one of the makers of Canada.

Some eighty years or so ago a young man left his father's farm at Waterloo, Quebec, and strode out alone to face the battle of life with nine dollars in his pocket. So successfully did he fare that today his fortune is estimated in tens of millions of dollars, and, as Mr. J. R. Booth, he is known throughout the Dominion and the United States as the king of the lumber industry.

Loyalty to the city and district which he chose for his home is an outstanding feature of his history. In the face of difficulties, often at sacrifice of money and energy, he steadfastly refused to move his mills to locations where they might be more advantageously placed, nearer the timber limits which he owned. To build up the industry on a large scale at the Chaudière Falls, between Ottawa and Hull, was his constant aim and dearest wish. He realized this ambition in bountiful measure, and the two cities today share the benefits of his success.

Although more generally known through his lumbering interests, his name is venerated among railroaders. Going to the assistance of the Canada Atlantic Railway in 1878, when it was mired under financial difficulties, he completed the 500 miles of railway and put the organization on a sound financial footing. He first built the railway, then developed the trade by building elevators, purchasing steamships, and then buying the wheat and other freight for the lines. The line was sold to the Grand Trunk Railway, now part of the Canadian National Railways, in 1904, and Mr. Booth pocketed $14,000,000.

Universal regret at the passing of one of the Dominion's most notable citizens, after a picturesque career rich in industrial romance, was expressed on all sides and by men in all walks of life. Tributes were paid to the late lumber magnate by Premier W. L. Mackenzie King, Right Hon. Arthur Meighen, conservative leader; Sir Robert Borden, former premier of Canada; Sir George Perley, M. P., former Canadian high commissioner in London, and others. In the words of Premier King, "Mr. Booth was indeed one of the fathers of Canada, and it is not too much to say that it is to men of such sterling worth and indomitable will as he possessed, more than to aught else, that we owe the development of our Dominion."

Can Use Scorched Wood for Newsprint

According to a report from the forestry branch of the Federal Department of the Interior, experiments carried to a successful conclusion during the last few months have proved that burned timber possesses a relatively high commercial value. When it is considered that hitherto it has been the accepted theory that once a fire had burned through a forest, the wood was good for nothing except fuel and that the annual destruction of timber in Canada by forest fires is 890,000,000 cubic feet, the importance of the experiments just concluded may be imagined.

They show that burned wood taken within three years of the time of the fire can be made into paper which is equal in quality to paper made from green wood. It is not possible, of course, to make the better grades of paper from burned wood, but the lower grades, such as newsprint, are the ones which are most in demand. It is not claimed for the discovery that it can be taken up immediately and applied by manufacturers, as there are differences in the processes of manufacture between burned wood and green wood.

Death Claims One of Canada's Prominent Foresters

R. H. Campbell, of Ottawa, who for many years was director of forestry in the Department of the Interior, died recently after a life of service in forestry work. Mr. Campbell held the post of director of forestry for sixteen years, and upon his retirement two years ago the staff of the forestry branch tendered him a farewell supper.

Mr. Campbell was born in Strathroy, Ont., in 1867, and entering the Department of the Interior when he was twenty years of age, he rose steadily from post to post. Early realizing the importance of forestry work, he devoted much attention to the study of that subject, especially as it related to Canada. He was one of the first members of the Canadian Forestry Association, which was formed in 1900, and was elected assistant secretary and treasurer.

QUEBEC

Formal Opening of Wayagamack News Mill

The last word in Canadian news mills was seen in operation on December 17th when a party of directors, security holders, bankers, brokers and newspaper men were given the opportunity of witnessing the new plant of Wayagamack News, a subsidiary of Wayagamack Pulp and Paper Co., Ltd., in action at Three-Rivers.

In less than a year from the company's decision as to the final details of the plans for going into the newsprint field, the first carload of an excellent sheet was shipped from the new mill. This plant has come into being since the first of last year, since when not only has the construction and installation work been carried out, but a market established for the new product of the company. The mill embodies the very latest features of newsprint mill construction and equipment, and is splendidly co-ordinated as to the various operations and shipping facilities.

The financial statement of Wayagamack Pulp & Paper Co. for the year ended November 30th, 1925, is unusually favorable and shows net earnings available for capital stock of $560,915, as compared with $89,013 last year, representing 11.2 per cent earned, as against 1.7 per cent. The improvement in earnings has been due to a marked change in the sulphate pulp and wrapping paper industries, with better prices and a better demand for the company's output. As no dividends were paid on the capital stock of $5,000,000 during the past year, the amount available for dividend, of $560,915, thus goes forward as an addition to the profit and loss surplus, which now stands as $1,981,964. The balance sheet of the company shows an absence of the $750,000 bank loan that existed a year ago, presumably in preparation for the construction of the newsprint mill.

Another Big Deal by International Paper

International Paper is reported to have made another important deal in extending its activities in Canada, and is said to have purchased all the timber limits tributary to the Des Quinze Falls in northwestern Quebec, including the important O'Brien and Bronson limits. All these limits are in the territory known as the Rouyn gold fields, and as hundreds of prospectors are working in this district, the fire hazard has been immensely increased. When the Porcupine gold fields in Ontario were opened up, that whole district was covered by a dense forest, and the influx of prospectors was followed by forest fires of unparalleled magnitude, in which a vast quantity of timber was utterly destroyed, scores of lives were lost, and many settlements and towns completely wiped out.

Up to the present the Quebec Government has succeeded, at

(Continued on page 1625)

Increased Speed, Greater Radius and Lower Costs for the Woods Operator with the SNOW-MOTOR

Fordson Powered

THE Snow-Motor makes available to all engaged in forest operations the most dependable transportation *Over* snow ever devised.

¶ This machine will move heavy loads *Over* snow, where horses can travel only with great difficulty. With the Snow-Motor, and its snug passenger cab there need no longer be painful cutter drives, exposed to the bitter cold, to Depot Camps.

¶ The Snow-Motor provides transportation *Over* snow for all purposes, under all conditions. It weighs approximately 4,000 pounds, yet it virtually "floats" *Over* snow, because in its construction and engineering it has been devised specifically for that purpose. No other machine ever invented functions in the same way. *Over* snow of any depth, or over piled up drifts, it glides with ease, packing down the snow as it goes, and it is capable of negotiating steep mountain grades.

Will Effectively Help These Industries

Lumbering
Mining
Pulp and Paper
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Milk Deliveries
Rural Public Utilities
Emergency Use in Cities
Hauling Freight to Railroads
Interurban Bus Operation
Doctors, Undertakers
And many others

For full particulars in regard to the Snow-Motor see your nearest authorized Ford dealer or write to us

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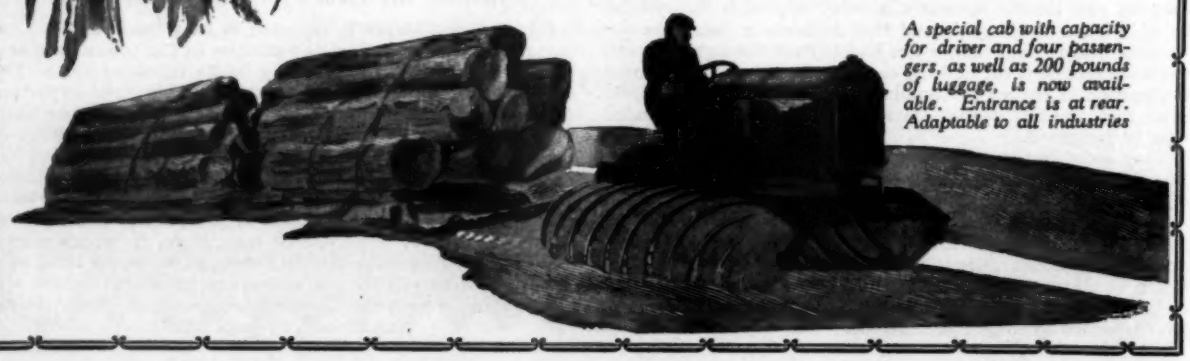


A special cab with capacity for driver and four passengers, as well as 200 pounds of luggage, is now available. Entrance is at rear. Adaptable to all industries

Program Thirteenth Annual Meeting of Canadian Pulp and Paper Association

To Be Held at the Ritz-Carlton Hotel, Montreal, January 27th, 28th, 29th, 1926

TECHNICAL SECTION

Wednesday, January 27th, 1926

10:00 A.M.

Business Meeting:—

Reading of the Minutes of Preceding Meeting.
Chairman's Annual Report.
Financial Statement.
Reports of Standing Committees:

1. Committee on Education. T. Linsey Crossley, Chairman.
2. Committee on Apprenticeship. A. P. Costigane, Chairman.
3. Committee on Chemical and Physical Standards. E. P. Cameron, Chairman.
4. Committee on Wood Measurement. P. J. Murer, Chairman.
5. Committee on Drying Paper. E. B. Wardle, Chairman.
6. Committee on Abstracts. J. N. Stephenson, Chairman.

Appointment of Committee on Nominations.

Paper: "Some Later Experiences in the Field of Water-Removal Through Felts," Dr. E. A. Rees, Manager Research Department, F. C. Huyck & Sons, Kenwood Wool Products, Albany, N. Y.
Discussion, with remarks on Rubber-Covered Rolls.

Adjournment for Lunch

2:30 P. M.

Paper: "A further Discussion of the Relation Between Cooking Conditions and Yield and Quality of Sulphite Woodpulp." R. N. Miller, Chemist, U. S. Forest Products Laboratory, Madison, Wis.
Followed by discussion.

Paper: "Modern Soda Mill Operation, as Exemplified in the Plant of the Tonawanda Paper Company, Inc., North Tonawanda, N. Y. William Cauldwell Munro, B.Sc., Chemical Engineer, Tonawanda Paper Co., Inc.

Paper: "Operations of the Ljungstrom Air Preheater," C. A. Jacobsson, Pulp and Paper Mill Accessories, Ltd., Montreal.

Adjournment

Thursday, January 28th, 1926

10:00 A. M.

Symposium: "Seasonal Variations in Life of Paper Machine Wires."
Contributors—Maurice Neilson, Belgo-Canadian Paper Co., Ltd.; Messrs. Flynn and R. Greig, Price Bros. & Co., Ltd., and others.

Paper: "Elimination of White Water Waste with the Continuous Filter."
John T. Hoyt, United Filters Corporation, Hazelton, Pa.
Followed by discussion.

Miscellaneous Business:
Report of Committee on Nominations and Election of Officers.
Installation of Officers.

Adjournment

1:00 P. M.

Special Luncheon given by the Technical, Research and Woodlands Sections. Guest of Honor—Dr. Harold Hibbert, D.Sc., Ph.D., Professor of Industrial and Cellulose Chemistry, McGill University.

2:30 P. M.

Joint Meeting of:
Technical Section,
Woodlands Section,
Research Section.
Program to be provided by the Research Section, Col. C. H. Jones, Spanish River Pulp and Paper Mills, Ltd., Chairman.

7:00 P. M.

Cabaret Dinner at the Mount Royal Hotel.

ASSOCIATION ANNUAL MEETING

Friday, January 29th, 1926

10:00 A. M.

Annual Meeting of the Canadian Pulp and Paper Association.
Order of business of the Annual Meeting of the C. P. & P. A.

1. Minutes of the Preceding Meeting.
2. President's Annual Address.
3. Reports of Sections:
   Board Section,
   Book and Writing Section,
   Chemical Pulp Section,
   Coated Paper Section,
   Felt Section,
   Kraft Pulp Section,
   Mechanical Pulp Section,
   Newsprint Section,
   Technical Section,
   Tissue Paper Section,
   Waxed Paper Section,
   Woodlands Section,
   Wrapping Paper Section.
4. Secretary's Financial Report.
5. Report of the Industrial Research Section.
6. Report of the Committee on Education.
7. New Business.
8. Election of President.
9. Adjournment.

The annual meeting of the Newsprint Section will be held immediately upon the adjournment of the Association meeting.

1:00 P. M.

Annual Luncheon at the Ritz Carlton Hotel. Speaker, Col. R. R. McCormick, Publisher of the "Chicago Tribune."

2:30 P. M.

Coated Paper Section.

4:00 P. M.

Sulphite Pulp Section.

The main part of the Woodlands Section Meetings will be taken up with:
Discussion on Canada's Pulpwood Resources, headed by Rolland Craig, of the Dominion Forestry Service and the Chief Foresters of the Several Provinces.
Report of the Committee on Reorganization, Mr. Bowden, Laurentide Company, Chairman.

6:30 P. M.

President's Dinner at the Ritz-Carlton Hotel.
Speakers: Premier L. A. Taschereau, of Quebec, Hon. Dr. Manion, M.P. for Fort William, Ont.

Members may secure hotel reservations through the office of the Association, 511 St. Catherine Street, W., Montreal.

Committee on Program of the Technical Section: J. N. Stephenson, Pulp and Paper Magazine, Gardenvale, Que.; Dr. J. S. Bates, Bathurst Co., Ltd., Bathurst, N. B.; W. G. Mitchell, Price Bros. & Co., Ltd., Kenogami, Que.; R. W. Hovey, Abitibi Power & Paper Co., Ltd., Iroquois Falls, Ont.; Edward Beck, Montreal; A. E. Cadman, Montreal.

7 ADVANTAGES

of Burning Pulverized Fuel

1. Ability to burn any available fuel, either solid, liquid or gaseous, in the same furnace without change, either simultaneously or separately.
2. Ability to secure maximum evaporation per pound of coal under all conditions.
3. Ability to maintain maximum capacity conditions over long periods.
4. Ability to meet widely varying capacity conditions with any available fuel.
5. Ability to maintain practically the maximum efficiency over a wide capacity range.
6. Ability to instantaneously meet any sudden peak demands without later interruption to continuous service.
7. Ability to bank over long periods with a minimum fuel loss.

The theory of burning coal in pulverized form has become a fact. Years of research by this organization has resulted in

LOPULCO
PULVERIZED FUEL SYSTEMS

Scores of the most efficient plants on this continent and abroad are **Lopulco** equipped

80% of the plants operating Lopulco Pulverized Fuel Systems have re-ordered

Where investigation is thorough LOPULCO wins

COMBUSTION ENGINEERING CORPORATION
POWER PLANT LIMITED EQUIPMENT

STOKERS OF ALL TYPES · PULVERIZED FUEL SYSTEMS · STEAM TURBO-GENERATORS · HIGH SPEED STEAM ENGINES · AIR PREHEATERS · RADIAL BRICK CHIMNEYS · COAL HANDLING EQUIPMENT · ASH CONVEYORS AND HOPPERS · SUSPENDED FLAT ARCHES · DE-AERATORS · CONDENSERS OF ALL TYPES · OIL BURNING EQUIPMENT · PULVERIZING AND GRINDING MILLS · RECORDING INSTRUMENTS · INDUCED AND FORCED DRAFT FANS · DIESEL OIL ENGINES

HEAD OFFICE—TORONTO VANCOUVER, MONTREAL, WINNIPEG

(Continued from page 1621)

a great cost, to prevent the spread of forest fires in the Rouyn district, but the menace is such that it would be better to clear off the timber, or at any rate to make such clearings that any fire would not be able to spread over the whole district.

It is now understood that arrangements have been made between the Provincial Government and International Paper by which all the timber in the Des Quinze district will be cleared. It is further stated that the company will proceed immediately with the construction of a power plant and pulp mill on the Des Quinze River, so that the timber may be converted into pulp on the spot.

St. Maurice Shareholders Ratify Merger Agreement

The shareholders of St. Maurice Paper Co., at a special meeting held in Montreal on December 8, concurred in the agreement made by the directors for the sale of the assets of the company to a syndicate that will carry through the merger of St. Maurice and Belgo, and also approved of the sale of the assets.

One of the features of the statements presented to the shareholders by M. B. Wallace, president of St. Maurice Paper Co., was that it was estimated that the earnings of the two companies would be sufficient to represent $8 per share on the 150,000 shares of no-par-value common stock of St. Maurice Valley Corporation. It was also stated that an earning power of $6 a share was indicated on the common stock of the Newsprint Investment Corporation.

Another important feature of the details not yet referred to was a definite announcement as to the amount of stock of the St. Maurice Corporation that will be held by the Newsprint Investment Corporation. The total amount of the common stock of the former, of no par value, is 150,000 shares, and the amount that will be held by the Newsprint Corporation will be 76,000 shares, or a little over 50 per cent. The amount of cash involved in the purchase of the assets of the St. Maurice Paper Co. will be $12,139,300, of which $2,600,000 to cover the calling in of notes for that amount on March 1, and $9,539,300 (and interest) that will be paid as cash about March 1 to meet the cash payment of $100 per share on each share of St. Maurice Paper Company's common stock.

Ontario Paper Starts Power Development on Outarde River

In accordance with the terms of the lease of some 2,000 square miles of timber limits in the Manicouagan district, development of the waterfalls of the Outarde River, located on the limits on the north shore of the St. Lawrence, 15 miles east of Bersimis, has been started by the Ontario Paper Co., of Thorold, Ont., which operates principally for the Chicago Tribune.

The lease in question was the first one in which the Provincial Government inserted a clause stipulating that the lessees were obliged to build a pulp mill near the water power development point within a set period. In this instance, it was provided that within two years, harnessing of the water power available from the Outarde River would be started, and also that within seven years a pulp mill of a capacity of at least 100 tons daily would be erected. It is expected that within two years the pulp and paper mill will be in actual operation and that the output will be increased to 200 tons daily.

During the month of November the Institute of Industrial Arts enrolled 36 students, increasing its enrollment from 753 to 789. The new students are employed in numerous Canadian and United States mills.

Pulp Mill Affected by Break of Dam

Considerable damage was done and lives were imperiled at Val Jalbert, an important pulp and paper center of the Lake St. John district, by the bursting of a dam at Commissioners Lake and the flooding of part of the district on the 11th of last month. The break was due to an abnormal rise in the waters of the Ouatchouan river.

The mills of the Quebec Pulp and Paper Mills, Ltd., were closed down for a few days as a result of the flood, but resumed operations after a short while. But they cannot continue operation for long, as the now unregulated flow of water is not expected to last for more than a month or so. The lake, which was used as a storage point, has been practically emptied through the accident.

St. Lawrence Paper Operating Its New Sulphite Mill

The sulphite mill of the St. Lawrence Paper Mills, Ltd., Three-Rivers, has been in operation for the last few weeks and is now producing eighty tons of news grade sulphite a day. Construction on this, the latest unit of the St. Lawrence mill, was started about six months ago, when the Three-Rivers city council finally agreed to the closing of a portion of Notre-Dame Street, as promised to the company in 1920.

The present output of eighty tons of sulphite per day is more than enough to meet the present requirements of the paper mill, which has two paper machines. One-half of this production is now being sold; but it is believed that, with the projected installation of two new paper machines at the mill, the entire output of the new unit will be utilized by the company itself.

Forest Rangers' School Doing Well

Twenty-five pupils attending the courses at the Forest Rangers' School, operated by the Provincial Government, have now started their practical work in the forests, which will complete their studies for the current year.

Already fifty rangers are on the eve of being qualified and will later be retained by private lumber firms or by the Department of Lands and Forests. The school was created two years ago by the Government, and very good results are expected through the fact that some of the qualified rangers will be given the opportunity to complete their studies and become forest engineers.

L. M. G. Hellstrom Opens Office in Montreal

Mr. L. M. Gustaf Hellstrom, formerly director and chief of the pulp and paper machinery department of Messrs. Bovving & Co., has left the firm after nearly ten years' service, and is taking up similar work in North America.

Mr. Hellstrom has arranged a temporary office at 113 St. Mark St., Montreal. He has taken up the sole representation of Messrs. Karlstads Mekaniska Verkstad, of Sweden, which is a well-known firm manufacturing pulp and paper making machinery of every description, from fast machines to supplying complete equipment for pulp mills. He has also secured representation of the Kamyr organization, which has works in Norway and Sweden, as well as of several other of the larger Swedish manufacturers and designers of modern pulp and paper making equipment.

International Paper Official Elected to Quebec House

Willie P. Grant, manager of the Canadian International Paper Co. at Batiscan, was chosen by the Liberals of Champlain county to represent them in the provincial by-election held on November 30th last. He was elected by a majority of over 500. Mr. Grant is of Scotch-Canadian descent. He is the son of the late Wm. Grant, of Three-Rivers, and nephew of R. F. Grant, resident manager of Canadian International Paper Co., in Three-Rivers. The member-elect has been manager of the company's mill at Batiscan for the past twelve years, and has been in the service of the company for some thirty years.

Quebec Workmen's Compensation Act to Be Amended

Enlarging its scope, increasing the indemnities and compensation, and considerably decreasing the formalities for claims entered under the provisions of the Workmen's Compensation Act, will be the main features of the amendments to be introduced at the coming session of the legislature. The government is far from persuaded that the creation of a compensation board, similar to the Ontario system, to award indemnities in case of labor accidents, would be of any help, and it is

Engineering ability coupled with skilled manufacturing!

Erie City Iron Works

Engineering Ability Expressed In Pulverized Coal Equipment

Due to Erie City design, maximum combustion efficiency is now available for the small as well as for the large industrial plant. Erie City Unitype Powdered Coal Equipment assures remarkable flexibility, ease of control to meet all load conditions and safety. No powdered coal is kept in storage; the fuel is burned as fast as it is pulverized.

Erie City engineers are ready to fit the use of powdered fuel to *your* needs.

TODAY, advanced methods of power-plant practice call for engineering leadership behind equipment specified. Engineering research must design and supervise the manufacture of such equipment. Engineering knowledge, expressed in familiarity with the problems of power users, must analyze operating conditions, discover where definite economies and improved performance may be effected and then accurately determine the type of equipment best adapted to achieve such performance.

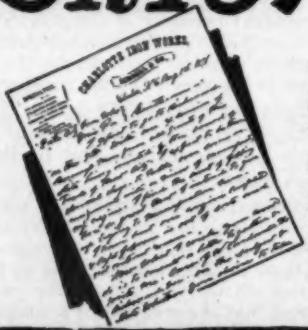
Erie City Iron Works is particularly well equipped to render such comprehensive service.

Recognized for years as the country's leading manufacturer of boilers, it has absorbed and utilized the best methods of manufacture to assure *quality of product.* But it has long since passed this stage. *Application of product* is a type of engineering service distinctly apart from the mere building of equipment—and it is along this line that this old-established company, rich in experience, has made far-reaching strides.

NOT alone boilers, but Unitype Powdered Fuel systems for firing the boilers, have received the concentrated effort of Erie City engineers, and the accumulated benefits of their findings are ready to point the way to new economies in *your* plant.

Engineering ability coupled with skilled manufacturing is a team that is ready to serve you.

In 1878

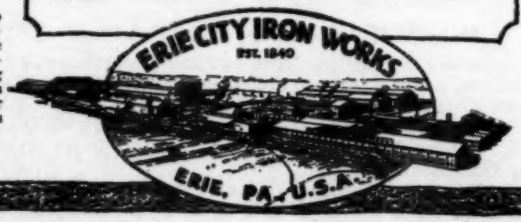


When Rutherford B. Hayes was President,

letters like this were coming in to Erie City Iron Works. The reproduction is too small to make the contents readable, but it is an indication of length of service and long experience—In fact the date on this letter is comparatively recent, for the foundation of this company was established way back in 1840.

Modern Steam Power Plants

Unitype Powdered Fuel Equipment—Water Cooled Furnaces—Coal Handling Equipment—Boilers, Inclined, Vertical and Horizontal Water Tube—Boilers, Economic, Horizontal and Vertical Fire Tube—Engines, Lentz Poppet Valve Counterflow, High Speed, Variable Speed, Vertical Slide Valve—Pressure Vessels, Tanks and Grey Iron Castings.



the intention to retain the present system of appealing to the civil courts in case of dispute.

The proposed amendments to the act are of special interest to the pulp and paper industry, as it is understood that it will be made to cover the lumbering and pulpwood industries in all their branches.

The Bayless Pulp & Paper Co., of Binghamton, N. Y., are reported to have contracted to sell their holding of 350 square miles of timber lands, constituting the Ste. Anne River shed, to a syndicate whose names have not yet been made public for a price stated to be in excess of $2,000,000.

St. Maurice Paper Woods Manager Murdered

Robert Tyhurst, district manager of St. Maurice Pulp & Paper Co. at St. Michel des Saints, a small village 62 miles north of Joliette, was shot and instantly killed by unknown assailants while at work in his office on the evening of December 1. Two of the inhabitants of the village have been arrested on suspicion and will be sent up to stand their trial before the Court of King's Bench.

The Government rights in the water power known under the name of "Rapide des Chats," on the Ottawa River about 30 miles west of the City of Ottawa, will be offered on lease at public auction on February 13. The water power is the same which was leased some time ago, but which was abandoned by the parties who obtained the rights to develop the rapids. It is reported that one of the conditions of the sale will be the erection of a big pulp mill in the vicinity.

All outside work on the newsprint mill being constructed by the Port Alfred Pulp & Paper Corporation, at Port Alfred, was completed before the cold weather had time to interfere with progress. The closing in of the buildings has greatly facilitated arrangements for the erection of machinery, which is now going forward. Paper is expected to be coming off the big Bagley & Sewall machines early in April.

Anglo-Canadian Pulp to Go Ahead in the Spring

It is definitely reported that a final agreement has been reached between the Clarke interests and the Quebec Government regarding the construction of a pulp and paper mill in the bay formed by the St. Charles and St. Lawrence rivers right at Quebec, and that work will be started early next spring.

George F. Hardy, New York, has been commissioned to prepare the plans for the new mill, which, it is estimated, will cost in the neighborhood of $10,000,000. It is understood that the whole output will be sent to England for the Rothermere group of papers.

Many paper men regret the passing away of Thomas P. Howard, whose death occurred in his fifty-seventh year on December 16 last. Mr. Howard served on the staff of Sir Charles Gordon with the British War Mission to Washington during the war, subsequently being raised to the post of deputy-director of the mission. Five years ago he became comptroller and vice-president of Howard Smith Paper Mills, having severed his connections with the Phoenix Bridge & Iron Works, Ltd.

The Warren Company, Limited, Rivière du Loup, Que., is a newly-formed organization to manufacture groundwood, sulphite or sulphate pulp, paper, paperboard and other paper materials. The capital is $250,000, and K. L. Warren, J. E. Léveillé and L. Chamaard, all of Rivière du Loup, are among the incorporators.

The Permutit Company, manufacturers of water softening and purification apparatus, have appointed the Chemical Engineering Equipment Co., 318 Lagauchetière West, Montreal, Quebec, as sole agents for Ontario, Quebec, Nova Scotia, New Brunswick and Prince Edward Island. Mr. C. K. McLeod is the manager.

ONTARIO

Company Formed to Develop Clay Deposits

Development of approximately 400 acres of china clay deposits at Kaolin City, on the Mattagami River, in northern Ontario, by a company incorporated with a capitalization of $7,500,000, is indicated in a story recently published in a Toronto paper. It is also stated that Premier Ferguson has given his undertaking to have the Temiskaming & Northern Ontario Railway extended from its present terminus, about 70 miles north of Cochrane, to Kaolin City, about 32 miles northwest, where the china clay deposits lie.

An initial plant with a production capacity of 500,000 tons per year is to be completed by midsummer of 1926. There are three principal products in the deposits, say the promoters, namely, china clay, silica sand and fire clay. H. S. Hancock, engineer, has reported that in his opinion this deposit, if exploited properly, will completely dominate the world's china clay market because of its purity, quantity and cheapness.

The principals in the present deal, which involves $500,000 in cash, are C. M. McCarthy, of Elk Lake, Ont., discoverer of the deposits; Hon. Edmund Bristol, M. P., of Toronto, and William Douglas, Sr., a Toronto lawyer. Mr. Bristol is said to have purchased a one-third interest in the property for $2,500,000.

Premier Ferguson stated that the railway line would be extended, or rather deflected, only if there seemed to be development enough to warrant it. He also explained that the proposed extension would serve other interests as well as the china clay fields, including the proposed Smoky Falls hydro development.

Booths Will Not Dispose of Their Holdings

The suggestion conveyed in an article published in a financial paper a short time after the death of J. R. Booth, to the effect that either the firm of J. R. Booth, Ltd., will be sold or that it will place a bond issue on the market, was countered by a statement issued by C. Jackson Booth, son of J. R. Booth, in which he said: "We are anxious to carry on the business because we believe that it was our father's wish, but our intentions in this direction can certainly be thwarted by ill-considered statements. Neither myself nor my brother (J. Fred Booth) desire to dispose of the business, as has been suggested."

Mr. Booth intimated that it would be some time yet before anything could be made public regarding the estate of his father.

The will of the late J. R. Booth is stated to be a very simple document. Though further details are not forthcoming as yet, and it is unlikely that application for probate will be made for a couple of months yet, it was learned that the construction of the last will and testament of the aged lumber baron is particularly simple and that there are no conflicting clauses to entangle the disposition of the large estate, the exact value of which has not yet been ascertained.

New Name Adopted for Backus Mills

The new name of the pulp and paper mills at Kenora, owned and operated by the Backus interests, is Kenora Paper Mills, Ltd. Since commencing operations the mills have been conducted through the Keewatin Lumber Co., pending the selection of a suitable name for the new concern.

The output of the newsprint mills is 120 tons daily, but this will be doubled very shortly, as soon as the new Bagley & Sewall machine is properly tuned up and adjusted. The citizens of Kenora are much pleased with the selection of the new name for the firm, as it will be a factor in advertising the town.

Expansion Projects of Thunder Bay Company

The Consolidated Water Power & Paper Co., of Appleton, Wis., which controls the Thunder Bay Paper Co., of Port Arthur, Ont., which recently acquired pulpwood cutting rights

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This control cannot be measured by titration as titration gives only the quantity of acid present. The determination of the Hydrogen Ion Concentration or pH value, however, gives the exact *degree of acidity* or alkalinity in definite figures, which can be recorded and duplicated at any time by the same or different workers. This guarantees uniform conditions for every batch and therefore a uniform product.

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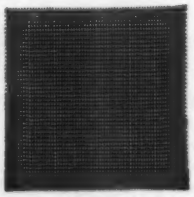

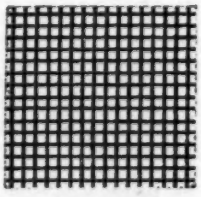

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Cleveland, Ohio, U. S. A.

over a tract of 2,000 square miles in the Nipigon district, have recently announced further details of developments that are planned. The grant will have no effect upon the company's Wisconsin mills, for which there is already a sufficient wood supply, but will mean an expansion of the company's business in Canada that within the next few years will double the present newsprint production of all its mills. Under the provisions of the agreement with the Province of Ontario, by which the Thunder Bay company will receive the timber from these limits, the company must increase its production over a period of years.

The company guarantees to be producing 100 tons of paper per day by October 1, 1927, and 200 tons by October 1, 1929, with the further guarantee that the production will eventually be increased to 400 tons, an amount greater than the combined printing paper production of the Wisconsin Rapids and Biron mills.

Mattagami Pulp & Paper Co. have removed their head office to room 808, Northern Ontario Building, 330 Bay street, Toronto.

Northern Group of Mills Organize for Safety Work

The Northern Group of mills in the Ontario Pulp and Paper Makers' Safety Association held its first meeting at Iroquois Falls a month ago, for organization purposes, and standard methods were tentatively drawn up in reference to definition of lost time accidents, computation of time worked, comparative figures on frequency of accidents, lost time, exchange of information, etc.

It was recommended that regular meetings be held quarterly and emergency sessions on the call of the president. Each mill will send to the chairman questions which it is thought should be brought up and it is more than likely that the next gathering will be held at Espanola.

Abitibi Had Best Accident Record in October

For the purpose of safety records, the mills of Ontario are divided into small and large mills, employing less or more than 200 men, respectively. For the month of October, the Abitibi mill at Iroquois Falls headed the list of the second class having lost the least time per 1,000 hours worked during that month, its record being 0.38 hours per 1,000 hours worked, while the next mill on the list had a loss of 0.40 hour.

Though gratified by this result, the men of Iroquois Falls are not satisfied to rest there and consider there is a lot to do before the mill is as safe as it ought to be. In October there was lost time of 92.5 days through accidents or just over three months.

A very noticeable thing in the monthly accident reports is the increasing number of accidents which cause no lay off. This is due to the fact that more men every month are adopting the only safe plan of going immediately to the doctor or first aid man with slight injuries, so that infection does not set in and no time is lost.

Canonto Ranch & Lumber Co., Ltd., Canonto, Ont., has been formed under a federal charter with a capital of $200,000, to manufacture lumber, pulpwood and wood products. C. C. Martin and W. B. Common, Toronto, are two of the incorporators.

The Hodge-Sheriff Paper Co., of Toronto and Montreal, have taken into partnership H. A. Goldsborough, who has been associated with the Canadian and European offices of the firm for the past seven years. The title of the company will remain unchanged.

McLarty Bros., general contractors, of Sault Ste. Marie, Ont., state in regard to the new pulp mill of the Little Rapids Pulp Co., Little Rapids, Wis., on the Kagawong River, Manitoulin Island, that the waterpower canal has been completed and the head works, stop-gates, etc., are ready for operation. The steel and wood penstocks are also finished and work is now through on all the buildings with the exception of the storage warehouse. The necessary docks and tramways have been built and all the equipment is in the mill excepting the water wheels which will be placed in position in the near future.

Beaver Company Starts Up Its Newsprint Machine

The newsprint mill of the Beaver Wood Fibre Co., at Thorold, has been put in operation and is now turning out newsprint. The machine is 166 inches wide, and was buit by Pusey & Jones, of Wilmington, Del. It is rated to turn out 70 tons of newsprint a day.

The two board machines of the company are also running to capacity and will continue making regular standard output. The new building, in which the news machine is housed, is of mill construction type, being fireproof in all respects and built of concrete, brick and structural steel.

The merger of the Allan Paper Company, Toronto, with the United Paper Mills, of the same city has been completed and the staff of the former has joined the United Paper Mills, of which R. I. Finlay is president. Charles Allen has become sales manager of the united organization. He has been identified with the trade for many years and was for a long time with Buntin Reid Co. before going into business for himself.

Hygienic Straw Co. Ltd., have been granted a Dominion charter authorizing them to manufacture and deal in paper made from any material, cardboard, and products of pulp and paper, strawboard and other preparations and products of straw, and to manufacture them into mailing tubes, cartons, bags, etc. The authorized capital is $100,000 and Toronto lawyers are mentioned as the incorporators.

Ontario Will Have a New Timber Policy

The Ontario Government has decided upon a new policy in connection with the sale of timber limits and natural reforestation. Instead of leasing specified areas of timberland to the five head-of-the-lakes pulp and paper concerns which have tendered successfully on the Nipigon limits, the Government will sell them the right only to cut so much cordage annually, and contracts will bear a clause compelling the cleaning out of all other merchantable timber, in addition to the pulpwood, which is the mills' main objective.

According to Hon. James Lyons, Ontario Minister of Lands and Forests, the provision that the companies must utilize all merchantable timber was introduced with a view to conserving timber stands, and, with regard to the natural reforestation effort, the department determined that 1,500,000 cords was sufficient wood to maintain each 100-ton unit in perpetuity, providing forest fire loss is eliminated.

The Davy Pulp and Paper Co., Thorold, has aplied to the Municipal Council to submit a by-law to the ratepayers for a fixed assessment of $25,000 for a period of ten years.

It is reported that Provincial Paper Mills intend to open paper jobbing warehouses in various other cities in Canada other than those they have acquired through the purchase of the John Martin Paper Co. Plans have not yet been revealed, but it is stated that a new concern will shortly be incorporated, to be known as Provincial Paper Sales, Ltd., and that the authorized capital will be $1,000,000. No official confirmation is forthcoming as yet.

The Frontenac Paper Box Co., which has been operating at Kingston, has been secured by Belleville, Ont. as a new industry for that town. The company is a subsidiary of the Fisher Paperbox Co., Ltd., Toronto. Belleville parties have secured a controlling interest in the Frontenac Paperbox Co., and manufacturing operations will proceed in Belleville, with the head office there.

The Canadian pulp and paper industry was honored recently by the Associated Boards of Trade of Ontario, which elected R. A. McInnis, manager of the Abitibi Power and

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Here is what Mr. Sidney Frohman, President of Hinde & Dauch Paper Company, says:

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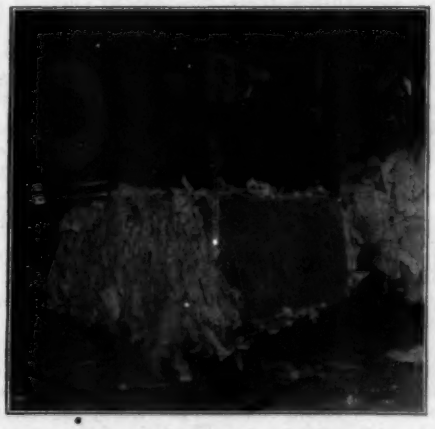
Your equipment has been satisfactory and apparently measured up to our requirements. We have had little occasion to cause readjustments. Considering the service, *are very much pleased* with the installations, and endorse their use by others.

Regardless of the type of scale you need, Howe makes them all—a Howe Ball Bearing Scale will give longer life, more correct weighing and freedom from repairs and maintenance expense.



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Paper Company's mill at Iroquois Falls, to the second vice-presidency. Mr. McInnis is also a member of the executive committee.

Doings at Iroquois Falls

"Group insurance" with the Sun Life Assurance Co. of Canada, for all employees of Abitibi Power and Paper Co., and subsidiary companies, went into force December 9th, when over 75 per cent of the employees which had been in Iroquois Falls for over six months had signed up. The idea of an insurance and benefit fund met with a splendid reception and in less than a week 83.3 per cent of the mill employees had signed and more are joining every day.

One day at the beginning of last month, when there was a good deal of "gas" around the sulphite mill, Ray Pidgeon was informed that the man in the chip tank house had not come down at the end of the shift, so he decided to investigate. He put on a gas-mask, went up to the chip tank, and brought the man down to the cooking floor.

Fine progress is being made on the new hospital, and the building is expected to be ready for use about February 1st.

While helping to pull out a shaft on the winder of No. 5 machine, Lloyd McIntyre slipped on the floor and fell, the heavy shaft bruising his fingers badly. The accident was caused by the carelessness on the part of somebody, who at lunch hour carried his coffee past that corner and spilt some of it on the floor.

President O. H. Moore, of the Hinde and Dauch Co., of Toronto, recently confirmed the report that the company will build a new mill at Trenton, Ont., construction of which will begin very shortly. It will have a capacity of 100,000 pounds of paper a day. This will make a total strawboard output of the company's plants in the United States and Canada of 460,000 pounds daily.

The transfer of the Kilgour Bros. property on the south side of Wellington St., Toronto, to the Canada Paper Co., Montreal, has been registered in Toronto. The consideration was $148,000.

MANITOBA

Provincial Paper Takes Over John Martin Paper Co.

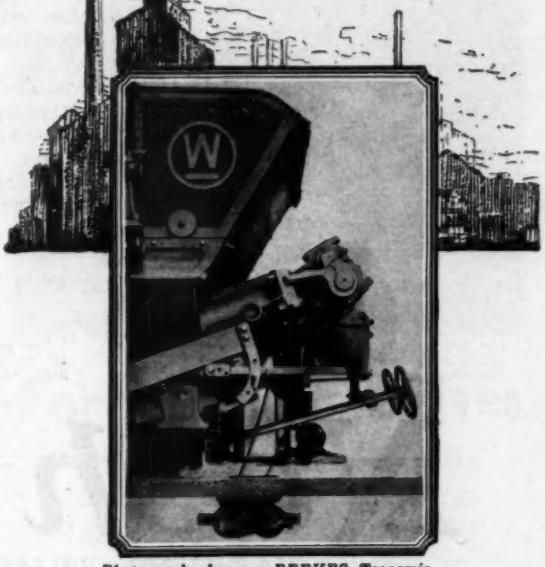
A paper deal of importance was consummated early last month when Provincial Paper Mills, Ltd., with head office in Toronto, purchased the wholesale paper jobbing business of the John Martin Paper Co., Winnipeg. The Martin company is one of the biggest paper jobbing houses in Canada and has branches at Calgary and Edmonton, the former carrying stock and the latter being the branch office. Both branches are taken over in the sale.

It was stated by S. F. Duncan, of the Provincial company, that it was the desire of his organization to establish closer relations between the mills of his company and the consuming public. In the East this intimate relationship exists already, and the new deal will perform the service for the West. The taking over of the Winnipeg concern will also constitute an outlet for the Port Arthur mill of Provincial Paper, which will shortly undergo considerable expansion.

It is understood that a new company will be formed with a million or a million and a half capital, as a subsidiary to Provincial; but in the meantime it will be known as the John Martin Paper Co., Ltd. The Winnipeg organization will continue to act as a general paper jobbing concern, handling other lines as well as those manufactured by Provincial, and serving the requirements of the printing trade throughout the West.

A party of 150 men started work early last month laying steel from an existing line of the Canadian National Railways to the site of Manitoba's first paper mill on the Indian River, at the mouth of Winnipeg River, commonly known as Fort Alexander. The distance from the existing line of the C. N. R. on the east side of Lake Winnipeg to the site of the mill is a little more than nineteen and a half miles, and the laying of the steel to the new mill is a three weeks' job.

In Plants Like Yours



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This new, improved No. 8 Nash Hytor Vacuum Pump for suction couch rolls has only a single inlet—the adjustable manifold connection is eliminated.

Note also that the pump is supported by the central cylindrical housing, to which the heads on either sides are bolted. These heads can be removed and the interior of the pump inspected whenever desired without disturbing the piping connection.

The central rings support promotes stability of the unit and aids in holding the shaft in perfect alignment. There is no metal-to-metal contact inside the pump that is likely to cause wear and decrease in vacuum. High efficiency is maintained in continuous service.

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BARRE, VT. **BOSTON, MASS.**

BRITISH COLUMBIA

A minimum wage law to govern workers in the lumber industry in British Columbia was proposed recently by Major Richard Burde, member of the Provincial Legislature for Alberni. Major Burde was the chief sponsor of the eight-hour-day adopted by the Government more than a year ago in spite of the industry's protest. The basis of the proposed legislation is that a minimum wage for men of 40 cents an hour should be compelled by statute.

It is reported that large pulp interests of Pennsylvania and Oregon have acquired 100 square miles of pulp timbers at Skidgate, Queen Charlotte Islands, and will erect a plant on the islands.

A meeting of the shareholders of the Beaver Cove Lumber and Pulp Co., whose holdings are located 150 miles north of Vancouver, was held recently for the purpose of considering an offer from International Harvester Co. to purchase 60 per cent of the stock of the Beaver Cove Co. It is reported that the consummation of this deal will mean the payment of the claims of the creditors of the Beaver Cove Co., amounting to about $2,000,000, the erection of a big newsprint mill, and the building of a large, modern saw mill.

Lawrence Killam, formerly president and manager of the Nova Scotia Tramways and Power Co., arrived in Vancouver a couple of week ago. He has been appointed manager of the reorganized Whalen Pulp and Paper Co., and expects to assume his new duties early this month. He is familiar with the mills and with the province, having acted as a consulting engineer in Vancouver five years ago.

NEW BRUNSWICK

Compensation Rates Increased

Schedule of charges which will be assessed against the various industries under the Workmen's Compensation Act during the year 1926, published recently in the Royal Gazette, provide for increases for the lumber industry.

Lumbering industry is in Class 2, and the new rates provide for payment of $6 on each $100 payroll for logging, pulpwood cutting, lumber yards, saw mills, lath mills, wood cutters, etc., with lesser rates for other branches. For pulp and paper mills the rate is $1.70. The rates which are now made $6 were $1.50 last year.

Inglewood Tract Estimate

An estimate of one dollar per acre for the Inglewood tract was given recently by Frank A. Barkhouse, of Fredericton, land surveyor and cruiser, and formerly employed by the New Brunswick Government, when he was on the stand in the hearing before Mr. Justice A. T. Leblanc, of the claim for damages of Inglewood Pulp and Paper Co., Ltd., against the New Brunswick Electric Power Commission.

The Inglewood tract includes about 41,000 acres and the part expropriated is said to be about 7,000. The company is asking about $840,000 damages.

The sale of St. George Pulp and Paper Co., St. George, N. B., to International Paper has been denied by those in authority. Representatives of International Paper and of Canadian Export Paper Co. were in St. George recently and have cruisers in the woods and over the lands controlled by the St. George Co. Further than that nothing has been done.

Paper box interests, planning on building plants in the tidal development zone at the mouth of the Bay of Fundy, were interested in the approval of the scheme registered by the Maine voters at a referendum recently, the plurality being eight to one in favor of selling the power outside the state as well as within Maine. The development is estimated to cost between $65,000,000 and $80,000,000, and to require five years, with 5,000 men employed.

Rhoads Tannate Leather Belting

For Efficient Drives

THE above belt, the main drive on a Fourdrinier machine, is a 32-inch Watershed Tannate. It is one of several belts that are winning a worth while reputation in Minnesota paper mills for Rhoads Tannate Leather Belting.

Its long life on hard drives, its unusual "Tannate grip" mean less trouble in upkeep, and very often an increase in output, which is an important factor in this day of severe competition.

Specify Tannate Belts even for your hardest drives—or Watershed Tannate if it runs in a damp or wet place. The Rhoads service guarantee assures you satisfaction.

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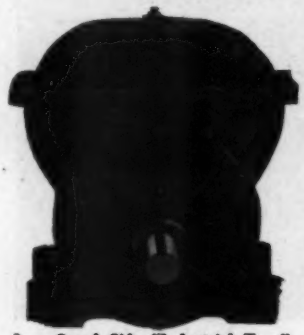

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A nest of plain spur gears revolving in oil changes the revolutions per minute of the input shaft to some desired revolutions per minute of the output shaft. The power transmitted is the same in both shafts. The efficiency is higher than any other form of gearing.

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January 1, 1926.

Luther Parker to Leave Kalamazoo

Luther Parker, who, with the exception of four years, has been associated with the Bryant Paper Co., Kalamazoo, since 1907, and superintendent of the Imperial Coating Division for the last several years, has left to become superintendent of the coating division of the Champion Coated Paper Co., Hamilton, Ohio.

Mr. Parker formerly resided in Hamilton, being then an employee of the Champion company. He came to Kalamazoo to enter the Bryant ranks and made steady advancement to the position of head of the coating division. No announcement has yet been made as to who will be appointed to fill Mr. Parker's vacancy.

Parchment Gave $4,000 in Christmas Presents

Eight hundred employees and officials of the Kalamazoo Vegetable Parchment Co. gathered Thursday morning, December 24, at 11 o'clock, in the community house to participate in the annual Christmas service and distribution of good cheer. All officials and employees shared alike in the presentations, each gift having an approximate value of $5.00.

An important feature of the Christmas festivities was the gift of honor diplomas to eight employees who have served over ten years in the company's ranks. They are Ben J. Leipzig, Henry H. Smith, Harry C. Sebring, Arthur H. Berry, Jacob Gosen, Eltjo Zommers, Amosa Brown and Samuel Glynn. The presentation was made by Jacob Kindleberger, president of the company.

The company's honor roll now numbers 32. Of these 13 were enrolled in 1922, 7 in 1923 and 4 in 1924.

Dr. Smith Burnham, head of the history department of the Western State Normal School, at Kalamazoo, spoke on the "Value of Good Will in Industry." An unusually fine musical program, including community singing, selections by the Parchment Glee Club and the K. V. P. band was offered. Don E. McDowell was in charge of the music.

All divisions of the Kalamazoo Vegetable Parchment Co. closed Thursday morning at 11 o'clock and reopened Monday morning, December 28.

Bryant Paper Co. Holds Christmas Party

Monday and Tuesday evening, December 21 and 22, was the scene of the fifth annual Christmas party in the Bryant Assembly Hall, in which every employee of the Bryant Paper Co. was royally entertained by the concern. The event was staged under the auspices of the Human Relationship Association of the Bryant Paper Co., though as in years past the entire expense is borne by the company as an appreciation of the loyal services rendered to the company by its people.

About 3,000 tickets were issued, over 2,000 for adults and nearly 1,000 for children, making it necessary to stage two nights. Monday evening was set aside for the employees of the Bryant and Superior divisions and the power and maintenance departments and their families; Tuesday evening the same bill was presented for the workers and their families of the Imperial and Milham divisions.

There was a big tree for the children, with presents, popcorn, candy, etc., and John A. Ross acting as Santa Claus. The program included community singing; selection by the Monarch Singing Four; a reading by Miss Mildred Tanis; tenor solo by William Gadke, accompanied by Miss Eleanor Gadke; black-faced comedians, Charles Snyder and Don Vaugh; Kazoo Kiddies; saxophone solo by Sam Poland, accompanied by Miss Elizabeth Poland. Refreshments were served and there was dancing until midnight to the music of Johnson's Orchestra.

Watervliet Company Plans Expansion

An expansion program, more than doubling the capacity of the Watervliet Paper Co.'s mill and necessitating the outlay of over half a million dollars, is planned for 1926. Recommendations to this effect, unanimously approved at a recent

STEEL
for Immediate Shipment from Stock

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Bars	Boiler Tubes
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Structurals	Corrugated Sheets
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Write for the Ryerson Journal and Stock List —the "Key" to Immediate Steel

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TRAVELING CRANES

Reading Cranes are the result of 25 years' experience in the manufacture of hoisting machinery and are built for severe service.

Fitted with either a hand or electric hoist, this type crane can be used in almost every industry with a saving in time and man power.

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We also make Chain and Electric Hoists.
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C. S. B. Sprinkler Heads

Keep a stock on hand to restore protection without delay

Approved by Associated Factory Mutual Fire Insurance Companies and the Underwriters' Laboratories, Chicago.

C. S. B. Sprinkler Co.
54 Batterymarch St.
BOSTON MASS.

TABER-PUMPS

CENTRIFUGAL & ROTARY

Fig. 192

No more stuffing box trouble.

A sturdy pump for paper mill use. Particularly well suited for handling chemical solutions. Built in iron, semi-steel, and bronze. Send for Bulletin.

Taber Pump Co.
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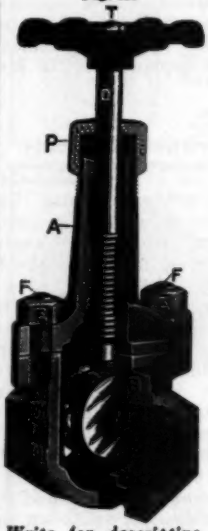
POWELL VALVES

"Pilot" Gate Valves

Fig. 466



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All iron or iron body with steam bronze trimmings. Simple in construction.

Working Pressure up to 125 lbs.

Economical and Reliable

Avoid disappointment in Valve Service by specifying POWELL VALVES

The Wm. Powell Co.
214 Draper St.
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Aurora Centrifugal Pumps

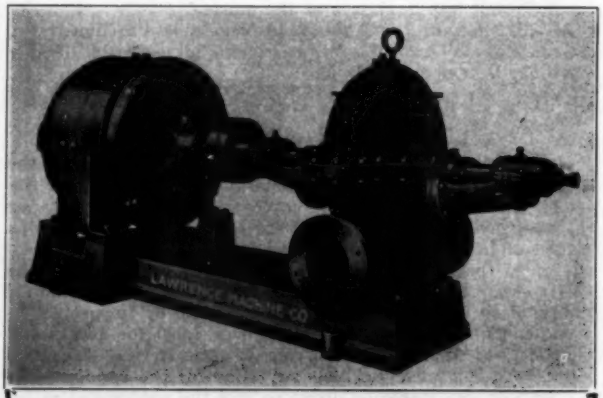
Type OMD

Aurora pumps are made in many types, to meet all conditions found in the paper mill field.

We specialize in horizontally and vertically split open and inclosed impeller, single and multi-stage and deep well turbine centrifugal pumps as well as deep well reciprocating pumps.

A card from you stating your conditions places our engineers at your service and results in a saving to you.

AURORA PUMP & MFG. CO.
Home Office and Factories, Aurora, Ill., U. S. A.



LAWRENCE Centrifugal turbine pump, single stage, horizontally split casing, double suction enclosed impeller, high pressure pumps for water supply service, designed and built in all sizes to meet all conditions. Direct connected to electric motors, steam turbines, gasoline engines, etc. Material and workmanship of the highest class. Please submit to our engineering department your specifications. Prompt service rendered at all times.

LAWRENCE MACHINE COMPANY
LAWRENCE, MASS.
Manufacturer of "Lawrence" Pump, Centrifugal Pumping Machinery, Vertical Steam Engines, Contractors for Special Machinery

meeting of the board of directors, will be submitted to the stockholders of the company, at the annual meeting January 20th.

The proposed enlargements include the installation of a second paper machine, which can be accomplished without the need of much remodeling of the present machine room; the erection in the coating division of two 100 double coating machines, said to be the largest machines of their type in use in any paper mill in America, and the installation of a large amount of auxiliary machinery.

Announcement of the expansion program was publicly announced just at the Christmas season and is everywhere acclaimed as a fine Christmas gift.

The directors of the company also will propose to the stockholders that the capital of the company be increased from $820,000 to $1,000,000 by the sale of 18,000 shares of common stock, at $10.00 par value each, at $20.00 for each share. The sale of this stock will net $360,000. It also is proposed to sell bonds to the value of $600,000.

For the last few years the Watervliet Paper Co. had to buy a large percentage of its raw stock from other mills. The putting in of their own second machine will do away with this necessity, for their coating mill, with the addition of two 100-inch coaters, can take the total capacity of both the machines.

$40,000 Fire at Constantine

Fire, believed to have been caused by spontaneous combustion, partly destroyed one of the warehouses of the Constantine Paper & Boxboard Co., together with a large quantity of baled paper stored for use. The blaze, which was difficult to trace on account of the smoke, broke out Friday afternoon, December 25.

The difficulty of fighting a smoldering blaze caused the authorities to summon aid from Three Rivers and Sturgis.

The plant to which the warehouse belongs is a subsidiary of the American Can Co. Vic Troyer, a well-known paper man, is superintendent and manager. The loss is estimated at $40,000.

A. H. Dwight, president of the Hawthorne Paper Company, has been removed from his home to New Borgess Hospital. He was stricken about three months ago with apoplexy and despite his age and the seriousness of the case, has shown steady and gratifying improvement. Reports from the hospital are that his general condition is satisfactory.

Abe Vanderburg to Return to Kalamazoo

Abe Vanderburg, who at one time was superintendent of the King Paper Co. and Riverview Coating Paper Co., now the Kalamazoo Paper Co. of Kalamazoo, and for the last three years superintendent of the Lincoln Mills, at Elkhart, Ind., will return to Kalamazoo February 1st in charge of the Superior Division of the Bryant Paper Co.

Mr. Vanderburg left Kalamazoo about seven years ago for Groveton, New Hamp., to take charge of a mill there. He left there to take charge of the Lincoln Mills at Elkhart, and has now resigned his position with that firm to become superintendent of the Superior division of the Bryant.

Paperboard Industries Ass'n to Hold Meeting

Everything points to a well-attended, interesting and instructive meeting of the Paperboard Industries Association which will be held at the Congress Hotel, January 20 and 21, 1926.

Meetings of the Folding Box Group, Paperboard Group and Container Group will be held on Wednesday, January 20th, in the Francis 1st Room, in the order named. The general meeting of all members is scheduled to come to order at 9:30 a. m. sharp, on Thursday morning, in the same room as the previous day. President Fletcher M. Durbin will preside at the general meeting.

Since the last meeting, a number of additional applications for membership have been received, which will be voted upon at the January meeting.

Progress in Paper Making

WITH progress in American paper making, we are concerned and connected. To commemorate the advances that have been made, the more important annals of the industry will be recalled from month to month in this space.

The Harper Fourdrinier Machine

In 1863, James Harper, of East Haven, Connecticut, patented an improvement in machinery for making paper. He combined with the Fourdrinier wire cloth, a couching felt, so arranged as to couch the paper from the wire cloth by direct contact. Thus the gap between the couch roll and the presses in the regular Fourdrinier machine was avoided, which rendered the Harper machine valuable for making very delicate papers.

Established 1842

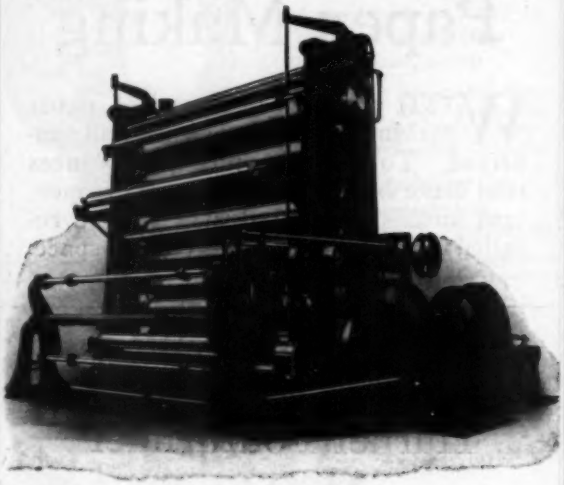
Cheney Bigelow Wire Works

Experienced and Progressive

Fourdrinier and Cylinder Wires
Dandy Rolls and Cylinder Moulds
made and recovered

SPRINGFIELD, MASSACHUSETTS

NORWOOD
SUPER CALENDERS



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NORWOOD ENGINEERING CO.
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LOCKPORT
Felts

EXCLUSIVE MAKERS OF

Paper Makers' Felts

Have You Run Them?
If Not, Why Not?

Are You Interested in Accurate Running Felts?

Give Us a Trial
Get Authentic Information
Ask the Men Who Run Them

Yours for service

LOCKPORT FELT CO., Newfane, N. Y.

Be As Particular As We Are

Protect Yourself—DEMAND

ALBANY GREASE

The 100% Lubricant —Never Drips

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You can always rely on the quality of Albany Grease. It hasn't varied in 58 years—not just grease, but a highly developed lubricating grease for conveyors, shafting, grinders, pulleys, etc. Sold in cans and barrels—all consistencies.

Always look for the Albany Grease Trade Mark.

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ADAM COOK'S SONS, Inc.
6 Varick St., N. Y.

Description

The hinged joint is smooth and flush with the belt on both sides. Easily separable for lengthening or shortening belt by removing tension and pushing out sectional steel rocker hinge pin.

By the hammer-clinched grip of steel, the belt end is bound firmly in equal straight line pull. The Strongest Belt Lacing on Earth —and the longest wearing.

Whether you lace a belt an hour or one a year, anywhere, regardless of service conditions or kind of belting, use Alligator Steel Belt Lacing.

Last year upwards of eight million belts were laced with it:

—as a protection to belt ends and to investments in belting.
—as a guarantee of long, unbroken belt service.
—as a quick, easy method of lacing belts.

Leading jobbers and dealers carry stocks.

Flexible Steel Lacing Co.
4675 Lexington St., Chicago, Ill.
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F—607A

Wisconsin News

January 1, 1926.

Safety Conference at Green Bay

Paper mills played a leading role in the first annual Fox River Valley Safety Conference held in Green Bay on December 9th, with more than 600 delegates in attendance. It was sponsored in part by the American Pulp and Paper Mill Superintendents' Association and the Paper and Pulp Section of the National Safety Council. The conference was to some extent modeled after the National Safety Conference in Cleveland in which THE PAPER INDUSTRY awarded a prize for the safest paper mill.

W. J. Peacock, of the Northern Paper Mills in Green Bay, was chairman of the conference, and the conference committee included among others W. F. Ashe, of the Thilmany Pulp and Paper Company, Kaukauna, L. Larsen, of the Marinette and Menominee Paper Company, Marinette, and M. J. Hoyman, of the Kimberly-Clark Company, Neenah.

The success of the conference induced the promoters to make this an annual occurrence and possibly to organize a Fox River Valley Safety Council. Appleton has invited the 1926 meeting. Judson G. Rosbush, Appleton, was the main speaker and delivered an address similar to his celebrated address at the Cleveland meeting last fall.

American Tablet Company Expanding

Officers elected by the American Tablet and Stationery Company, which recently purchased the property of the American Tablet Company, of Green Bay, are as follows: President, W. Albrecht, St. Joseph, Mo., vice-president, W. W. Sunderland, West Carrollton, Ohio; secretary, W. J. Bertrand, Green Bay, treasurer and manager, M. Forberg, Green Bay.

The successors to the American Tablet Company have announced a program of expansion which includes the addition and rearrangement of machinery and an increase in personnel which will take place gradually during the first half of the new year. The aim is to have between 100 and 150 employees by June.

The company is affiliated with the Western Tablet Company, of St. Joseph, Mo., and the Miami Tablet Company, of West Carrollton, O., of which Mr. Albrecht also is the chief executive. It is hinted that some of the business of the older concerns may be diverted to the Green Bay plant in view of the advantages in freight rates existing between that city and Chicago and St. Paul.

The Wisconsin Railroad Commission is interested in an interstate movement to establish uniform legislation affecting stream pollution by paper mills. Vance P. Edwards, of the Forest Products Laboratory and C. M. Baker, state sanitary engineer, attended a conference recently at Harrisburg, Pa., where this subject was discussed. It was pointed out that laws governing treatment of sulphite would be discriminatory against the mills of one state unless all paper mill states had similar legislation.

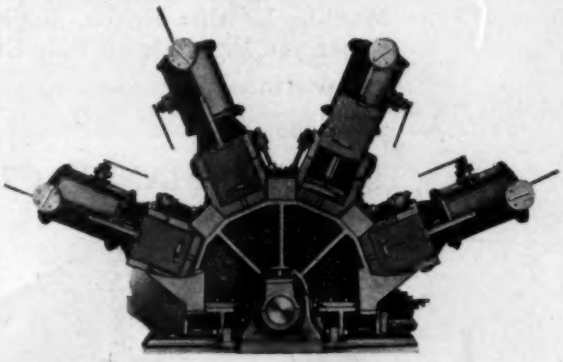
Kimberly-Clark Company employees and their families, particularly the children, were guests of the company at a community Christmas program held at the community clubhouse in Kimberly, Wis., Dec. 21. The exercises centered about a huge Christmas tree, with the Cecilian band, a quartet and school children furnishing the music. Gifts were distributed by "Santa Claus."

Consolidated to Issue Stock Dividend

Notice of an impending stock dividend of 25 per cent was given stockholders of the Consolidated Water Power and Paper Company last week in the form of a letter announcing a special meeting of stockholders to confirm an increase of $1,600,000 in the capital stock of the company.

The new stock certificates which will bring the capitalization of the company to $8,000,000, will be distributed immediately, it is understood. Declaration of the stock dividend is made possible by the appreciation in the value of the com-

INTERNATIONAL GRINDERS



Built with either three or four pockets—heavy construction throughout.

Pockets held in position by two large steel bolts—bridge trees extra heavy.

Pockets large in size, so that frequent refilling is unnecessary.

Save-alls below outside pockets catch all pulp when pockets are opened.

Special tapered bronze bushings—thread on inside only.

Bearings very large—wedge adjustable.

Equipped with Barker valves which are designed so that they stay tight.

Green Bay Barker Co.

Green Bay, Wisconsin

Makers of the Famous Green Bay Barker

"Claflins can't be beat for stuff that's hard to beat"

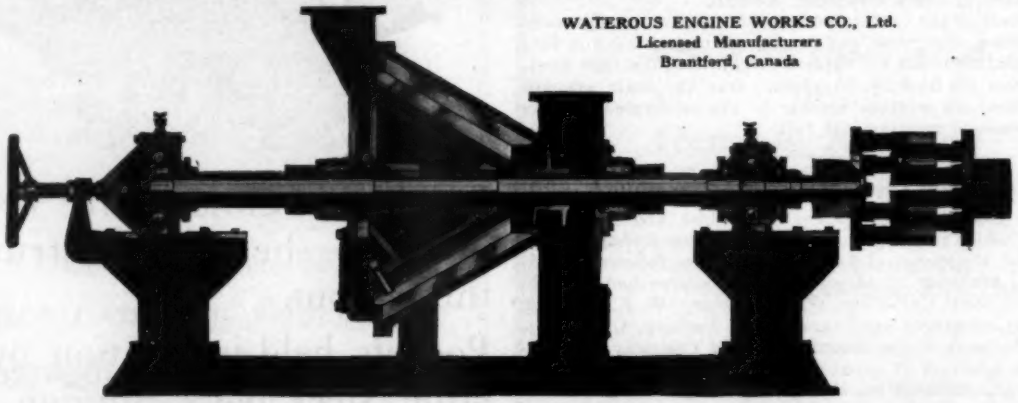
Claflin makes continuous beating possible. Unequalled for Rope Manilla, Leather Board, Sulphite Screenings, Wall Board, Kraft Paper and Waste from Pulp Stones.

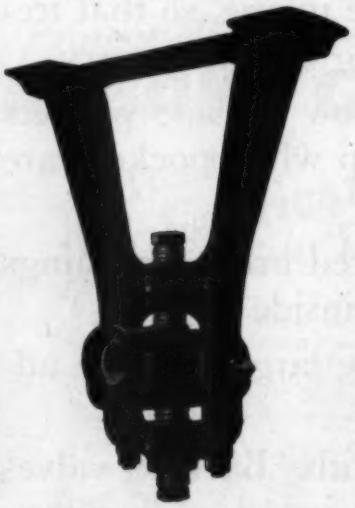
Write for catalogue. Built in three sizes described on page 350 1925 Paper & Pulp Mill Catalogue.

Write for catalogue *Built in three sizes*

HERMANN MANUFACTURING CO., Lancaster, Ohio

WATEROUS ENGINE WORKS CO., Ltd.
Licensed Manufacturers
Brantford, Canada



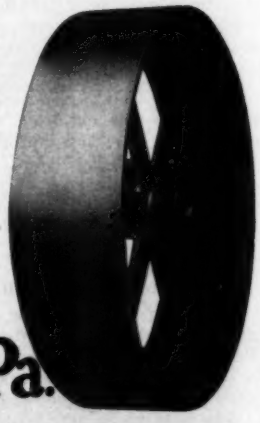


Founded on the bed rock of Quality

Taking into consideration the long life of a cast iron hanger and pulley, the first cost is negligible. Then why not specify the article with an inbuilt reputation for quality—the T. B. Wood's Line of Power Transmission Appliances?

For 69 years T. B. Wood's Sons Company has been manufacturing a quality product that is durable and dependable—a line of power transmission appliances that has established a "high Mileage" reputation. In all of those sixty-nine years we have never sacrificed permanent good will for temporary profit—and we never will.

On that next order call in the Wood's Dealer.



T.B.Wood's Sons Co., Chambersburg, Pa.

New England Branch, Cambridge, Mass. Southern Office, Greenville, S. C.

Flexible Couplings, Motor Pulleys, Speed Reducers, Cast Iron Pulleys and Hangers
U. G. Automatic Belt Contractor for Short Center Drives

pany's property, resulting from the reinvestment in the business of earnings in excess of the regular dividends.

While the stock dividend in itself is a transfer on the company's books of $1,600,000 from the surplus account to the capital account, creating no new values, it is nevertheless of importance to stockholders in that they will receive the same annual dividends on the new stock as on the old. The company's Wisconsin mills are at Appleton, Wisconsin Rapids and Stevens Point.

Fire recently threatened the Paper Roll Plug Company plant in Menasha when a blaze broke out in the dry kilns. The flames were difficult to extinguish, but firemen put it out before much damage was possible.

W. J. Fish, formerly of Appleton, now connected with a paper mill in Hamilton, Ohio, has obtained a government patent on his invention of a packing box for pulp and paper beaters.

De Pere Mill to Start Operating Soon

Nearly all the machinery of the new De Pere Pulp and Paper Company, of West De Pere, has now been installed, and manufacture will start early in 1926. The mill is established in the former Davis boiler plant of that city.

When operation commences, the concern will employ about 35 persons at the start. There is space for more paper machines which will be installed within the next two years. Morris Miller of Green Bay is at the head of the concern. An investment of $100,000 will be represented in the plant when manufacture is started.

Large shipments of pulpwood are now arriving daily at Appleton and other Fox River Valley paper cities from the lumber woods of northern Wisconsin. The average shipments, when at their height, will be about 25 carloads a day. Lumbering was somewhat delayed this season on account of lack of snow.

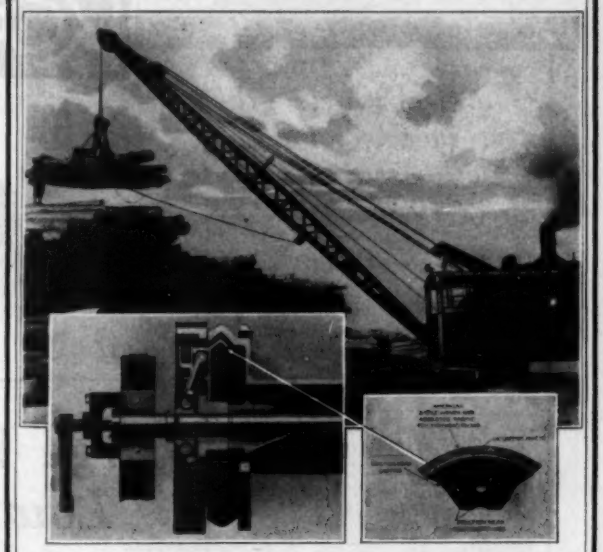
Proposed Changes in Insurance Premiums

Changes in workmen's compensation insurance premiums based upon accident experiences in the various state industries may be made and will affect the paper industry of Wisconsin. Experience ratings in compensation insurance will be worked out by a committee of twenty-four representatives of industry headed by George F. Kull, secretary of the Wisconsin Manufacturers Association. D. C. Everest, secretary and general manager of the Marathon Paper Mills Company, of Rothchild, represents the paper industry on the committee. The committee will hold several meetings in Milwaukee to consider the procedure for putting into effect an experience rating. The proposal is based upon the argument that industries with but few hazards should not be made to pay as high premiums as industries noted for an abundance of accidents.

James H. Delbridge, president of the Marinette and Menominee Paper Company, of Marinette, who died last month, left all his property to his widow, according to the will filed in probate court. The estate was estimated at about $100,000 in real and personal property, not including the homestead.

The iron bridge which for years spanned a tailrace at the Appleton Machine Company, is being moved to span a tailrace at the Telulah Mill of the Fox River Paper Company on Grand Chute Island, in Appleton. The bridge is being replaced with a much smaller bridge of concrete. The paper company will benefit by the new bridge, as it will give it increased fire protection through ready access by fire apparatus.

John D. Watson, general manager of the Wisconsin Wire Works, of Appleton, was recently given a patent by the United States government on his invention of a heddle frame movement for machines manufacturing Fourdrinier and other



One Reason Why "AMERICAN" Locomotive Cranes Work Smoother, Last Longer

MUCH of the smooth operation of "AMERICAN" Locomotive Cranes is due to the "AMERICAN" Large Diameter, Cool Running Expansive Friction Clutches. So velvet smooth is the grip of these perfect clutches that the slip ring used to cushion shocks to the gearing on some cranes using old type positive clutches is not needed on "AMERICAN" Locomotive Cranes. The clutches are of the "AMERICAN" compound lever type. They expand with an umbrella action out into the friction groove of the drum. The heads travel only a fraction of an inch to make contact and the operation is so easily accomplished that one finger on the friction lever does it.

The friction heads are faced with non-burning asbestos fabric which has stood long continuous run tests without any sign of charring.

Write for descriptive catalog.

AMERICAN
HOIST & DERRICK CO.
Saint Paul, Minn.
New York, Chicago, Pittsburgh, Seattle, New Orleans.

ROOTS

These products are the means of low cost pumping service

Roots Rotary Pumps for water or pulp provide positive displacements without the use of Valves or other small parts. The cost of maintenance is practically nothing. The overall efficiency is 75 to 85 per cent.

Roots Rotary Pumps combine the simplicity of the centrifugal type with the economy and positive displacement characteristics of the reciprocating type.

Roots Vacuum Heating Pumps were designed for handling condensate and air from dryer rolls and return line heating systems.

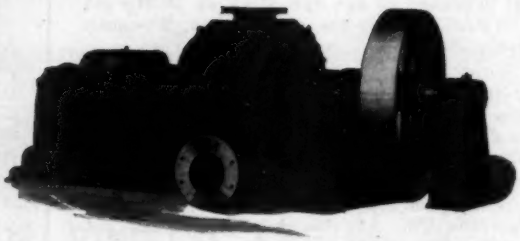
Roots blowers are used in paper mills for agitation of liquids, oil and gas burners, dandy rolls and calenders, and pneumatic conveying. Many blowers are now in service in paper mills installed for conveying wood chips.

Roots Vacuum Pumps were especially designed for the handling of air and water under ten to twenty inch vacuum from suction boxes and vacuum rolls.

Forms of Drive

Roots Rotary Vacuum Pumps can be arranged for any form of drive that is best suited for the installation. They are essentially slow speed machines and where steam is available they are best driven by means of flexible coupling from steam engines. They are ordinarily equipped with pulleys so that they can be belted to any convenient form of power. Where motor drive is required, some speed reduction is necessary, such as silent chain or gears. We recommend that your inquiry state the form of drive that you would prefer.

Bulletins on all or any particular pump may be had for the asking.



Large Volumes at Low Vacuums ---and Lower Power Costs

Lower costs! That's the point. Roots Vacuum Pumps handle large volumes without excessive size. They are low in first cost, require less power than reciprocating pumps at modern vacuums and cost practically nothing for maintenance.

Water is not churned around the case to cause excessive power without doing useful work.

Here is a pump designed particularly for paper mills, hence it comes the closest to fulfilling all requirements of the paper mill engineer.

Our engineering staff will gladly assist you in plans for adapting ROOTS Rotary Vacuum Pumps to suction boxes, Vacuum rolls.

Write for Bulletin P-114.

The P.H.& F.M. ROOTS CO.
DEPT. 18
CONNERSVILLE, IND.

Chicago Office 128 S. Michigan Ave.
New York Office Room 808-120 Liberty St.

paper machine wires. The device will not be placed on the market but will be installed on machine of the Appleton plant.

Combined Locks Constructing Addition

Combined Locks Paper Company, of Combined Locks, Wis., near Appleton, has broken ground for the construction of a big addition to its plant. It will be 100 by 170 feet in size and two stories in height, of steel, brick and concrete material, and of a design that conforms with that of the general architecture of the plant.

Contract for the project has been awarded to C. R. Meyer and Sons Company, of Oshkosh, builders of numerous paper mill plants in the Fox River Valley. The addition will not mean installation of new machinery but will provide more working space in the finishing department and better facilities for storage. The first floor will be used for storage purposes and the second floor will be a part of the finishing room. The work probably will be completed before spring.

The Flambeau Paper Company of Park Falls, Wis., recently completed installation of a PAX automatic telephone system of fifty telephones connecting the office, the mill, the power house and the yards. Fourteen of the phones have outside connection; the others are intra-plant communicating only.

Vocational School Opens

The course in papermaking to be taught in Appleton, Neenah, Menasha and Kaukauna vocational schools is starting in January. Harold C. Noyes, of Rumford, Maine, has been engaged as instructor. Mr. Noyes will live in Appleton but will divide his time between the schools of the four Fox River Valley cities.

This is the first project of its kind in Wisconsin and one of the few in the country. Similar courses are taught in the paper manufacturing centers of Maine, Massachusetts and in sections of the Miami River Valley in Ohio.

Mr. Noyes was pulp and paper instructor in the Rumford vocational school and in charge of industrial training in the Oxford Paper Company plant at Rumford. The course, which is a result of a long study here, may later be extended to other cities of the Fox Valley and probably to cities in the Wisconsin River Valley.

Dr. Navarro de Andrade, who is chief forester of San Paulo, in Brazil, last month visited the Forest Products Laboratory in Madison, to study certain experiments in the pulping of the eucalyptus, a quantity of which he had previously had shipped from Brazil to the laboratory. It was to ascertain whether eucalyptus would produce paper other than book grade.

Power Line Connects Nepco with Consolidated

The connecting link in a chain of power plants on the Wisconsin River from Rhinelander to Nekoosa was made possible by permission granted by the Wisconsin Rapids city council for the erection of a high power line through the city to connect the plants of the Consolidated Water Power and Paper Company and the Nekoosa-Edwards Paper Company in Wisconsin Rapids, for which the two concerns had petitioned.

Construction will begin as soon as possible, it is understood. The project, when completed, will insure the two plants a more even supply of power during the seasonal stages of water levels.

The village of Nekoosa, home of the Nekoosa-Edwards Paper Company, last month became a city by act of the village board. The mayor and other city officers will be elected in a special election on Jan. 12. The infant city has a population of 1,800.

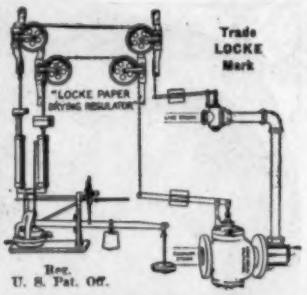
The Hayton Pump and Blower Company, of Appleton, last month filled a large order for pumps for paper mill use. It consisted of 18 pumps, occupying three carloads, which were

Molybdenum Steel Balls
for Severe Service
Maximum Service — Maximum Capacity Ball Bearings made for heavier duty — inquire regarding their advantages.
Important sizes now ready— others in preparation.
18340
MARLIN-ROCKWELL CORPORATION
Gurney Ball Bearing Division
JAMESTOWN, N.Y.
See page 374 in the 1925 Paper and Pulp Mill Catalogue
GURNEY
BALL BEARINGS

LOCKE Paper Drying Regulator

This regulator controls both live and exhaust steam for any purpose where steam is used, or it will control the direct steam when used alone. In unlike, both in construction and operation, any device that has heretofore been designed for this purpose. Controls not only temperature of the dryers when paper is running over them, but maintains the same temperature whenever there is a break in the paper. This machine is most sensitive to any change in temperature of dryers, yet it has been found to be perfectly reliable and what is more, is not continually getting out of order.

Also manufacturers of other steam specialties.



Reg. U. S. Pat. Off.

Locke Regulator Co., 76 North St., Salem, Mass.

"Locke" Regulator Agency, 39 Cortlandt Street, N. Y. C.

Canadian Representatives: Peacock Brothers Limited, 1695 Delorimier Ave., Montreal, Can.

Pickles' Patent Automatic Steam Regulator FOR Paper Making Machines

Which absolutely control the drying of the sheet. Installed on sixty days' trial

W. F. PICKLES **Buckland, Conn.**

Morey Paper Mill Supply Company

99 Chauncy Street BOSTON, MASS.

Vulcan TRADE MARK

DRYER FELTS

BRANDON 3-PLY "TRI-UMPH" AND STANDARD WARP

Deckle Tape and Cutter Webbing—Cotton and Rubber Belting—Enamelled, or Rubber, Fourdrinier Aprons—Rubber Splicing Tissue—Neutral Soap Powder—Dryer Felt Sewing Twine —Superheat Asbestos Packing—Rubber Sheet Packing—Steam and Water Hose "Lambeth" Cotton Transmission Rope

THE DRAPER FELT

Unexcelled for strength, openness, resiliency, and general running qualities. Made to meet the most exacting conditions on all types of machines and all kinds of papers. Only one grade and that the highest.

Made by

DRAPER BROTHERS COMPANY

CANTON, MASS.

Woolen Manufacturers Since 1856

REPRESENTATIVES

L. H. BREYFOGLE, Kalamazoo, Mich. INTERNATIONAL TRADING CO., Philadelphia, Pa.

shipped to the Backus-Brooks Company, of Kenora, Ontario. One of them was a large triplex plunger weighing 15,000 pounds. Another was an anti-acid bronze pump for pumping acid. The machines will be used in a new addition of the Ontario paper mill.

Management of Falls Mfg. Co. Being Changed

A reorganization in the management of the Falls Manufacturing Company, of Oconto Falls, has been announced following a visit at the plant by Herman Elas, president of the Continental Paper and Bags Company, of which the Falls plant is a subsidiary. A change was made necessary by the death of J. H. Delbridge, president of both the Falls Manufacturing Company and the Marinette and Menominee Paper Company, of Marinette.

An advisory committee has been appointed to look after the affairs of the company. It consists of Frank Cota, assistant manager, chairman of the board, August Gustin, plant superintendent, George Bonner, paper mill superintendent, Antone Gustin, pulp mill superintendent, Anthony Pesch, chemist, William McKeever, steam and power plant engineer, S. Petterson, yard superintendent.

The Fox River Paper Company, which with a number of other Appleton concerns, had brought suit to test the constitutionality of the state recapture clause of the public utilities law, lost the case in circuit court at Madison. The court ruled that the concerns must first obtain a permit from the state railroad commission before they may undertake the reconstruction of the middle dam in Appleton. Under the recapture clause the state reserves the right to take over dams and waterpower after a certain period of years. It is expected the case will be carried to the supreme court.

Two 265-foot steel towers to carry the wires of the Northern Paper Mills of Green Bay across the Fox River and form a part of the big power line to White Rapids are being erected. They are the highest towers in Green Bay, the steel work in each tower weighs 37½ tons.

The American Writing Paper Company (Shattuck and Babcock Division) at De Pere, has announced the appointment of Raymond D. Terrien as assistant superintendent of the mill. He will be next in authority to Charles E. Garvin, local manager and superintendent. Mr. Terrien has been employed in the office for a number of years and was in close touch with the manager's duties.

Theodore Vander Putten, Little Chute, suffered a fractured skull as the result of a fall on a concrete platform while unloading pulp for the Thilmany Pulp and Paper Company in Kaukauna.

A postponement of the hearing of claims against the Island Paper Company, of Menasha, which was scheduled for Dec. 1, until March 1 was decided in circuit court at Oshkosh. The company is in receivership, with Hugh Strange of the John Strange Paper Company, Menasha, as receiver.

Paul Chlrogge, a workman of the Kimberly-Clark Company at Kimberly, was fatally injured in a fall from a scaffold recently. He died later in an Appleton hospital. Just as his body was being conveyed from his house to the cemetery, a child was born to the widow, but it died the next morning. There are three other children surviving.

The Earle Gear and Machine Co., Philadelphia, Pa., announce the sale and transfer of all designs, patterns, patents and good will covering Earle Centrifugal Pumps to The Aldrich Pump Co., Allentown, Pa., who will continue the manufacture and marketing of them. This transfer will enable the Earle Company to devote their entire time to the manufacture of Earle cut gears, movable bridge operating machinery, cold metal saws and special machinery.

Dayton High Speed Beaters—Champion Coated—Hamilton, Ohio

19 to 49

Nineteen Dayton High Speed Beaters have replaced 49 standard holland beaters at The Champion Coated Paper Company, giving greater output.

The Champion Coated Paper Company, Hamilton, Ohio, recently installed 19 Dayton High Speed Beaters to do the work that 49 holland beaters did before.

The Result—based on exhaustive tests stands as a wonderful testimonial to the merit of Dayton

High Speed Beaters

Among the accomplishments recorded the following stand out:

Greater daily production
A better grade of paper
Saving in power
Increased density of stock
Saving in beating time
Saving in labor
Saving in floor space

The actual figures, and percentages, as furnished by the Champion Coated, on this "19 to 49" installation are available. And best of all—what Dayton High Speed Beaters are doing at the mill at Hamilton, Ohio, they can do for you.

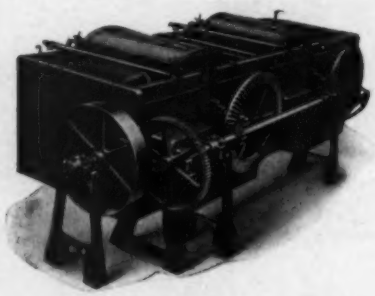
A letter will bring you some surprising facts.

We Rest Our Case on Performance

D B & H

The Dayton Beater & Hoist Co.

Dayton, Ohio



Bleached Sulphite Washer

TWO A. D. WOOD CYLINDER TYPE

A high efficiency machine handling large capacity with low power and minimum upkeep.

Absence of couch or doctor and continuous self cleaning wire are important features in handling stock containing bleach liquor.

Simply and strongly constructed.

Chemical resisting material furnished where necessary.

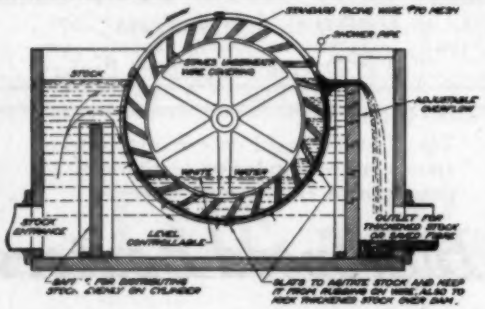
SEND YOUR ORDER AND GET THE BEST

Decker and Decker Washer

A well designed, simple, reliable and compact machine to thicken or wash your stock for long periods of time without attention.

Multiple units used to give a machine of great cleaning capacity per cylinder. An ideal layout when used in conjunction with our high dry test Rogers Wet Machines.

We call on our extensive experience to solve your problems quickly and efficiently.



A. D. Wood Machine

Used as Pulp Thickeners, Savealls, Pulp Washers and Water Filters

ADVANTAGES:

Reduced Wire Costs	No Couch Roll
Enormous Capacity	Minimum Repairs
Only 2 H. P. Required	No Doctor
Works Automatically	Requires No Attention

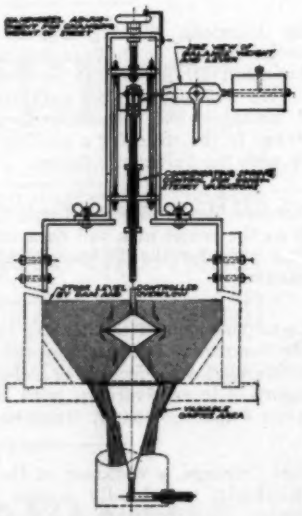
Over 150 Machines Sold and in Use

Boivin Weight Regulator

FOR FOURDRINIER MACHINES

More than 30 already giving invaluable service on fast and slow speed machines, handling all kinds of stock, heavy and light. Install it, adjust to give desired weight, and leave it alone. Overweight claims eliminated, with big improvement in broke loss and running conditions. Handles capacities ranging from 10 to 125 tons with equal efficiency.

Write Us Now for Details



PULP AND PAPER MILL MACHINERY
GLENS FALLS MACHINE WORKS

GLENS FALLS, NEW YORK

OUR LINE IS MANUFACTURED IN CANADA BY

THE NORTHERN FOUNDRY & MACHINE CO., LTD., SAULT STE. MARIE, ONT.

See pages 346 to 347 in the 1925 Paper and Pulp Mill Catalogue

Northern New York News

January 1, 1926.

Wilder Sells Diana Mill

The entire interests of Mark S. Wilder in the Diana Paper Company, of Harrisville, have been purchased by J. Victor Baron and John H. O'Connell, and they in turn will sell enough of the stock to Frank P. Wilder, who already has a heavy interest in the company so that the three will own an equal interest. Mr. Wilder is retiring from the business and will spend two years abroad. Mr. Wilder is also retiring from the paper industry in order to devote his entire time to the operation of the Colonial Motor Coach Corporation, of which he is one of the organizers. The coach corporation operates about 800 miles of automobile bus lines in New York state. He is a brother of Frank P. Wilder.

Mr. Wilder has been president of the Diana Paper Company since it was organized in 1905. The officers of the newly formed company are: president, John H. O'Connell; vice-president, James Humes; secretary and treasurer, Frank P. Wilder. The board of directors consists of the officers and J. Victor Baron.

Mr. O'Connell has been general manager of the Diana mill for the last two years, coming to Harrisville from Kalamazoo, Mich., where he was general superintendent of the King Paper Company mill. While there he originated two high grade book papers. He is a past president of the American Pulp and Paper Mill Superintendents' Association.

The Diana mill is at present making book paper and light weight catalogue paper. The new book paper which the company is making is known as English Finish and there is a large demand for it.

The Diana mill is one of the newest in the paper mills of Lewis county. The paper industry in that county goes back nearly a century. The Diana mill was started by the two Wilder brothers, the late Charles H. Remington, Francis M. Hugo and John Weeks. In 1910, the Oswegatchie Power Company was organized to supply the mill with power which was needed when the mill was changed from the manufacture of tissue to catalogue paper. For several years the company supplied catalogue paper to the Sears Roebuck Company of Chicago.

About ten years ago, the Diana Company made extensive plans for the future and a great deal of reforestation was done. In 1914, the company set out 150,000 saplings. The company owns about 4,000 acres of timber lands and has an extensive forestry project, including its own nursery.

In 1912, the Wilder brothers obtained exclusive ownership of the mill, buying the interests of Francis M. Hugo, Warren F. Howe and A. J. Howe.

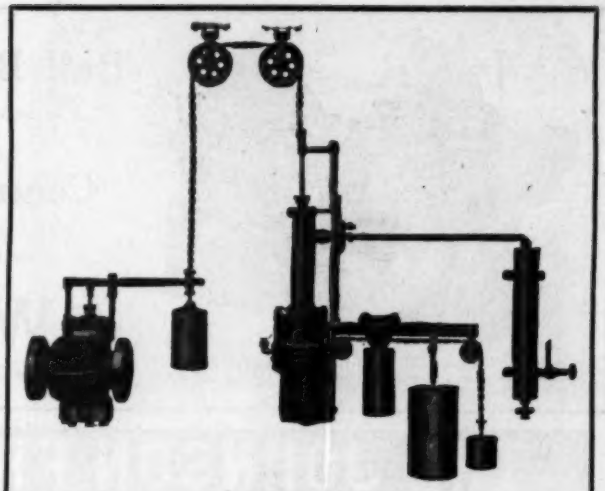
A first mortgage closed bond issue for $200,000 on the water power, real estate, property and equipment of the company was placed on the market recently. The proceeds will be used for the purchase of new equipment.

Carthage Sulphite Plant to Reopen

The plant of the Carthage Sulphite Pulp & Paper Co. is about to be put in operation after two years' idleness. It is expected that about $75,000 will be expended in changing the plant over from the manufacture of newsprint to the manufacture of container board and other paper products. About 100 men will be employed in the new plant.

James Quinn, former superintendent of the Hinde & Dauche company, has been engaged to superintend the new mill, and John R. Draper has been engaged as sales manager. The properties and assets of the mill were taken over by Charles E. Norris, receiver, Jan. 14, 1924, and the mill has been idle since that time. At the time the company went into the hands of a receiver, the assets were valued at $578,000.

There were 233 unsecured creditors when the property went into the hands of a receiver. On Feb. 20, 1924, a petition was presented in United States court in which it was stated by the receiver that it was impractical to attempt to operate the mill in its condition at that time, and that it would require the elimination of a large part of the interest chargeable against the plant, as well as the addition of at least $200,000 new capital after interest charges were eliminated. An order



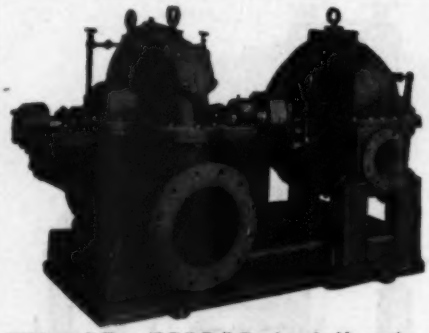
Accurate control of steam pressure at the Dryers

The Mason Combination Reducing Valve keeps steam pressure absolutely constant regardless of fluctuations in initial pressure or volume of steam required. It is easily adjusted to meet widely varying conditions.

Years of dependable service with minimum care and attention are assured when you specify the Mason Combination Reducing Valve. It is designed and built by an organization that has specialized in the manufacture of high grade pressure regulating devices for over forty years. Mason engineers will gladly co-operate with you in solving your particular pressure control problems.

Write for Catalog No. 62 containing complete information.

Mason Regulators
MASON REGULATOR CO.
Boston, Mass.
8739



"Weinman" Type "LB," Ball Bearing, double suction, centrifugal pump, directly connected to steam turbine, with flexible coupling.

Ball Bearing Pumps

The logical improvement in pump design applied to

Centrifugal Pumps

The progressive papermaker's choice for all mill purposes

The Weinman Pump Mfg. Co.

270 Spruce Street Columbus, Ohio

The Weinman Line

Boiler feed pumps
Bilge water pumps
Paper stock pumps
Lime water pumps
Hot well pumps
White water pumps
Groundwood pumps
Sulphite pumps

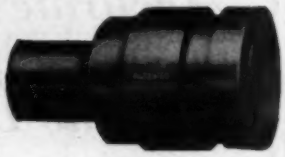
THE JOHNSON FRICTION CLUTCH

AS USED ON THE LANGSTON

Rotary Slitter, Creaser and Slotter

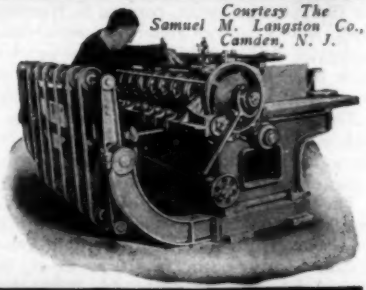
Here's what Johnson Clutches can do on this paper machine. On the Langston Slotter a Johnson installed on the cutter shafts speeds up the registering of the slotting heads and feed.

Write for Catalog P. I.



Single Clutch Exterior

Johnson Clutches are used extensively in paper plants throughout America, and in foreign paper plants as far distant as Siam. Compact, strong, dependable, long life clutches. Equip with Johnsons. Complete data on request.



Courtesy The Samuel M. Langston Co., Camden, N. J.

THE CARLYLE JOHNSON MACHINE CO. MANCHESTER CONN

WEBSTER QUALITY

Steel and Malleable Chains for Pulp and Paper Mills

WHATEVER the type of chain that best meets your own peculiar requirements, Webster has it, and when you have made sure that the chains you employ in your mechanical handling devices bear the —Z— trade-mark of the Webster works, you have gone a long way toward profitable operation in your plant.

Webster chains for mechanical handling devices in pulp and paper mills consists of pintle chain, detachable chain, combination steel and malleable iron chain, riveted and detachable drag chains, and steel pushed roller drive chain.

Our 96-page catalog No. 46, covering our complete line of chains and sprockets, will be forwarded to you on request

THE WEBSTER MFG. CO.

4500-4560 Cortland Street
CHICAGO

was secured from Judge Cooper ordering the sale of the mill, and the sale took place in May, 1925, J. C. Marsh, of Philadelphia, Pa., and David W. Balmat constituting the purchasing committee which bid in the mill for $400,000. The bonds were secured by the mortgage held by the United States Mortgage and Trust Company. Mr. Marsh, one of the bondholders' protective and purchasing committee, is treasurer of Stroudt and Company, security dealers in Philadelphia.

The Sherman Paper Company has presented $100 and $50, respectively, to the pension funds of the Watertown and Carthage fire departments for services during a recent fire in the village of Felts Mills where the mill of the company was located. The fire destroyed two business blocks in the village and seriously threatened the paper mill. Men and motor apparatus from Watertown and Carthage went to the rescue and saved the mill property from destruction.

Christmas Party at Harmon Mill

On Thursday afternoon, December 24, the entire force of the Harmon Paper company of Brownville, numbering 122, with their wives and families, were guests of the company at a Christmas party in the mill. An orchestra was engaged for dancing. Seating space was provided on big rolls of paper along the walls. A large Christmas tree was at one end of the hall. Each man received a leather bill fold with his name engraved on the outside and containing a dollar bill. Each woman received a toilet set. It is estimated that the Christmas tree was so large that it would have produced nearly a ton of sulphite pulp.

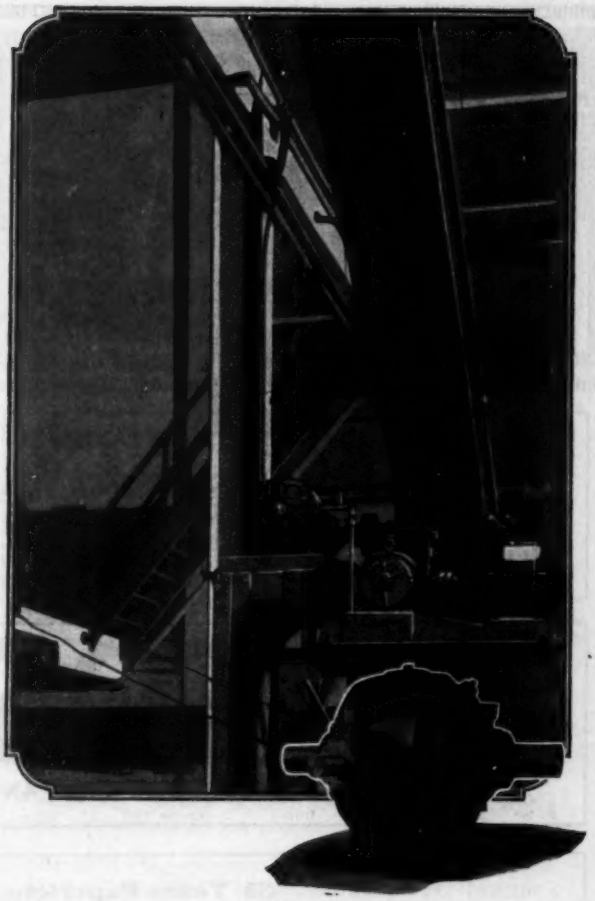
R. H. Rohrbeck, credit manager of the mill, presented John J. Warren, president of the company with a model of Mr. Warren's latest invention, a magazine grinder. The model was made by the engineering department of the mill and a demonstration of the machine was given at which it worked perfectly. The three members of the entertainment committee were each presented with a bronze coffee urn.

George M. McKee, who resigned as president and general manager of the Algonquin Paper Corporation of Ogdensburg last summer, to become president and executive head of the Port Alfred Pulp and Paper Corporation of Canada has disposed of his entire interest in the Algonquin company to F. A. Augsbury and his associates. Upon Mr. McKee's retirement, Mr. Augsbury was made president and W. E. Westbrook was added to the directorate. Since then, Mr. Westbrook has been elected mayor of Ogdensburg. Mr. McKee will retain his home in Ogdensburg until spring, when he will permanently move to Montreal.

The short life of the modern newspaper is causing much concern to Joseph Gavitt, curator of the New York State Newspaper Collection, housed in the Education Building at Albany. The Newspaper Collection is one of the best in the country. Mr. Gavitt points out that the newspapers of a century ago are in excellent condition, the papers printed on modern newsprint made of wood pulp will not last a century, but are already quickly falling to pieces.

Paper mills along the Black river enter the winter in excellent condition as far as water supply is concerned. Not only is the river delivering a heavier flow than normal, but all the storage reservoirs are filled. Secretary Cullings of the Black river regulating board declares that there is an ample water supply for the entire winter. In fact, the regulating board would welcome an opportunity to release some of the impounded water in order to provide room for the spring floods, and it is probable that a considerable quantity will be released during the winter.

J. Victor Baron, vice president and general manager of the St. Regis Paper company, in a year's forecast given local newspapers, said: "As far as the paper industry is concerned, I feel that the present upward trend of business will continue. In the newsprint field, the demands on the part of



MODERN

The time is not far distant when the plant with antiquated Speed Reduction equipment will be as undesirable as a house without plumbing or electric lights.

The Modern Speed Reduction unit has proven such savings in space, power, repairs and maintenance expense that their replacement of more cumbersome and more expensive methods is only a matter of a comparatively short time.

Modernize now and secure the benefits that Modern Speed Reduction units offer.

210

William Ganschow Company
1015 Washington Blvd., - - Chicago

BIRMINGHAM - - - - C. B. Davis Engineering Co.
BOSTON - - - - - - - - - - - Allen & Dove
NEW YORK - - - - - - - L. C. Bigelow & Co., Inc.
SALT LAKE CITY - F. C. Richmond Machinery Co.
SEATTLE - - The Perry E. Wright Engineering Co.
SAN FRANCISCO The Perry E. Wright Engineering Co.
DETROIT - - F. J. Holdsmiller

MOORE

STEAM TURBINES
CENTRIFUGAL PUMPS
REDUCTION GEARS

MOORE STEAM TURBINE CORPORATION
Wellsville, N.Y.
"BEST AT EVERY TURN"

MAGIC BOILER PRESERVATIVE
"The Pioneer Boiler Treatment"

Positively removes and prevents scale, stops minor leaks, pitting and corrosion

GARRATT-CALLAHAN CO.
310 South Michigan Avenue, Chicago

148-156 Spear St.
San Francisco

MAGIC
ESTABLISHED 1904

1328 Broadway
New York City

POWER PLANT PIPING

We are fully equipped to supply fabricated materials and to install complete piping systems for Electric Power Stations, Blast Furnaces, Steel Mills, Coke Works, Paper Mills and Industrial Plants of every description—backed by an experience of almost a quarter century.

Pittsburgh Piping & Equipment Co.
PITTSBURGH, PA.

Steel Plate Construction

Steel Storage Tanks, Blast Furnaces, Gas Holders
Steel River Barges and Plate Work of all Kinds
Steel Transmission Towers

RITER-CONLEY COMPANY
General Offices, Pittsburgh, Pa.

ECONOMIZERS

Reduce fuel costs by making use of waste exhaust gases to preheat the boiler feed. Patented construction proven by 20 years of service.

FOSTER

SUPERHEATERS

Improve engine, turbine and boiler economy by enabling a given amount of steam to do more work. Over 10,000 installations in stationary power plants.

POWER SPECIALTY COMPANY, 111 BROADWAY, NEW YORK

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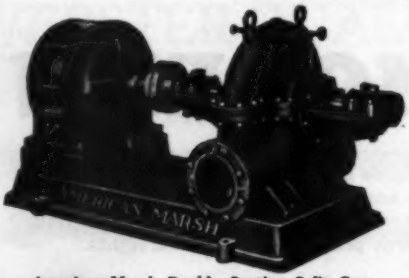
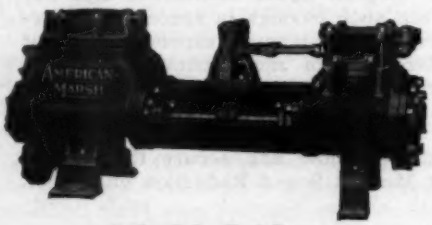
35 Years Experience Makes a Difference



American-Marsh Double Suction Split Case



Duplex Boiler Feed Pump

Simplex-Duplex Centrifugal

Write for Bulletin on the Type You are Interested In.

AMERICAN-MARSH PUMPS

QUALITY IS THE THING

THAT is responsible for the success of American-Marsh Pumps in every kind of service. It is this high quality and reliable performance that has caused thousands of users to accept American-Marsh Pumps as Standard equipment.

Long years of service have proven their economy. There are several pumps in the line especially designed for paper mill work, and when it comes to selection 35 years of quality workmanship means much to the buyer.

Our Line Includes

BOILER FEED PUMPS
AIR COMPRESSORS
DEEP WELL ENGINES
WET AND DRY VACUUM PUMPS
BILGE PUMPS
HYDRAULIC PRESSURE PUMPS
CENTRIFUGAL PUMPS
CONDENSATION PUMPS

See page 434 in the 1925 Paper and Pulp Mill Catalogue

AMERICAN STEAM PUMP COMPANY

Chicago Office
926 Monadnock Block

Battle Creek, Michigan

New York Office
17 Battery Place

the newspapers throughout the country are continually increasing. As they use more and more newsprint, the paper industry becomes better. Of course there is a period every year during the summer when there is an oversupply of newsprint, but in the winter months there is not enough to meet the demands. In general, I believe it will be a good year for paper manufacturers."

Joseph A. Quinlan, traffic manager of the St. Regis Paper company and chairman of the traffic committee of the Watertown Chamber of Commerce, has been appointed a member of a special committee of the Atlantic States Shippers' Advisory Board to have charge of all the transportation problems in Northern New York and to interest all industries and manufacturers in the work of the board and to present their problems to the board for solution. The special committee consists of 17 members, five of whom are from New York state.

Defiance Makes Change in Record Time

It has only been a short 50 days since the reconstruction of the old Pettebone-Cataract plant was started by the Defiance Paper Company, who took over this Niagara Falls mill several months ago. But with the co-operation of the Hammermill Paper Company, the reconditioning of the machine, the transportation and installation of all the machinery and equipment was accomplished in record time.

Both paper machines are now in full operation, and are producing high quality sheets. The Yankee machine has been equipped to produce both light and heavy Machine Glazed Sulphite papers in addition to the well known M. G. Seneca line, formerly made by Hammermill. It is also the intention to branch out into the specialty field and equipment is being added to take care of these requirements.

Will Manufacture Rayon

Bierne Gordon, Jr., vice president and general manager of the newly organized Carlisle controlled Shenandoah Rayon Corporation, has just returned from Europe where he has been inspecting the process of manufacture.

Present plans contemplate getting spruce pulpwood for the manufacture of rayon from the timber lands of the St. Regis Paper company in Canada, which is of the Carlisle group. The pulpwood will come up the St. Lawrence to Oswego via boat.

Twenty-five thousand dollars damage was done to the warehouse of the Skaneateles Paper Company on Christmas eve. The fire smouldered 24 hours before it was extinguished. Fire threatened to spread through the entire mill. Fifteen streams were poured into the blazing structure for more than eight hours before the fire was gotten under control. A crane was then used to move the rolls of paper so that the fire could be extinguished. About 1,000 tons of paper were consumed or badly damaged. The building itself was not damaged to any extent.

W. D. Thompson was elected president of the Herkimer Fibre company at Herkimer. Other officers elected are: First vice president, M. J. Higgins; second vice president, Raymond Harter; secretary, Clayton Casler; treasurer, Charles Hilts. The Herkimer Fibre company is a member of the International group.

Not Concerned Over Embargo

Northern New York newsprint manufacturers do not express much concern over the proposed embargo or prohibitive tax on pulp wood by Canada, principally because they do not feel that Canada is ready to take such a drastic step. They point out that parliament would not pass an embargo measure without the support of the cabinet and this is something that the cabinet will not do.

They admit, however, that the embargo would be a serious blow to the Northern New York manufacturers, as it would either force them out of business of force them to move to Canada. One manufacturer declared that steps should be

Proper Heating Stops Winter "Sweating"

STEAM and vapor condensing on cold walls and ceilings of your plant causes winter "sweating" which is bad for paint on the walls and equipment in the room.

The B. T. U.—Bayley Thermo Unit—overcomes winter "sweating" by providing proper heating. It distributes a dry uniform, tempered heat to every corner of factory space. The cold air is drawn from the floor by a powerful centrifugal fan, heated, by being blown through steam coils, and whirled up and out into the room. This circulates the air and distributes heat uniformly, overcoming "cold spots" and wall and ceiling condensation.

The B. T. U. provides this better heating at a lower cost both of installation and maintenance than a direct radiation system.

Write for the bulletin "The Heat Machine for Industry" describing this efficient factory heater.

Bayley
AIR ENGINEERING & EQUIPMENT
HEATING AND VENTILATING
AIR WASHING AND HUMIDIFYING SYSTEMS
MILL EXHAUSTERS — PRESSURE BLOWERS
MECHANICAL DRAFT FANS
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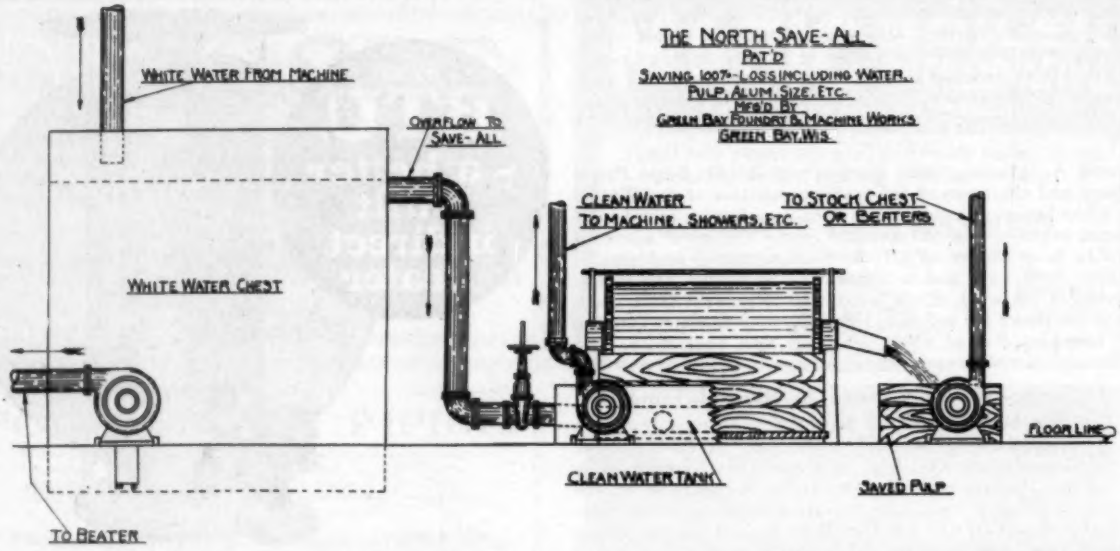

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See Page 349 in the 1925 Paper and Pulp Mill Catalogue

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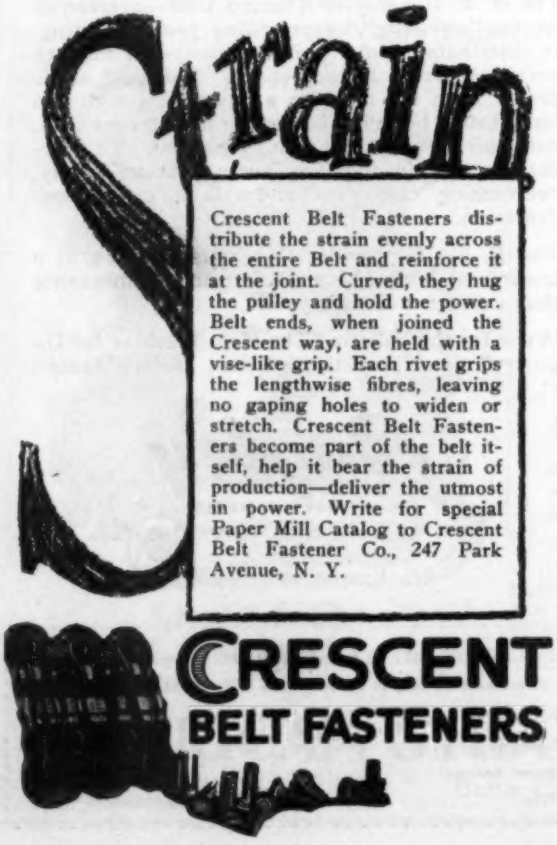

Crescent Belt Fasteners distribute the strain evenly across the entire Belt and reinforce it at the joint. Curved, they hug the pulley and hold the power. Belt ends, when joined the Crescent way, are held with a vise-like grip. Each rivet grips the lengthwise fibres, leaving no gaping holes to widen or stretch. Crescent Belt Fasteners become part of the belt itself, help it bear the strain of production—deliver the utmost in power. Write for special Paper Mill Catalog to Crescent Belt Fastener Co., 247 Park Avenue, N. Y.

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taken at once to show Canada that it would be unwise to impose such an embargo.

A still greater increase in the power possibilities of Black river is proposed in the Panther mountain reservoir. The Stillwater reservoir increases the water power during the dry season by 1,200 horsepower. The Panther mountain reservoir will, engineers estimate, increase the power by 2,724 horsepower, insuring a steady flow throughout the entire year. The Panther mountain reservoir would hold back ten billion cubic feet of water.

Hoffman-Youmans Mills Sold

The Hoffman-Youmans Paper Mills, Inc., and the Richard S. Hoffman Company plants, all located in Baldwinsville, have been sold to the Beebee Mills, Inc., of New York city in a deal involving more than $400,000. The mills which have stood idle since last June will be reopened on an increased capacity basis. Considerable new modern equipment will be installed. The Baldwinsville companies were owned by the estates of William H. Hoffman and Richard S. Hoffman. William H. Hoffman died about a year ago and Richard S. Hoffman died last March.

The Beebee Mills, Inc., organized a few months ago by R. L. Beebee, of New York, are at present negotiating for the purchase of other paper mills and present plans call for the concern becoming a big factor in the paper and pulp industry. With the mills go valuable water power rights on the Seneca river.

Mr. and Mrs. George W. Knowlton, of Watertown, celebrated their 55th wedding anniversary December 8. Mr. Knowlton is president of Knowlton Brothers, Inc., of Watertown and is one of the oldest paper manufacturers in the state. Mr. and Mrs. Knowlton were married in Auburn Dec. 8, 1870, Mrs. Knowlton being Miss Gertrude Ely. In addition to being president of Knowlton Brothers, Inc., Mr. Knowlton is president of the Watertown National bank.

Frederick Norwood

Frederick Norwood, aged 50, for many years connected with the paper industry in Northern New York, died at his home in Glen Park, following a long illness. Mr. Norwood was employed by the International Paper company at Glen Park for 20 years and after the International mills closed there, he became night superintendent of the St. Regis Paper company plant at Black River. He held that position four years, retiring two months prior to his death on account of ill health.

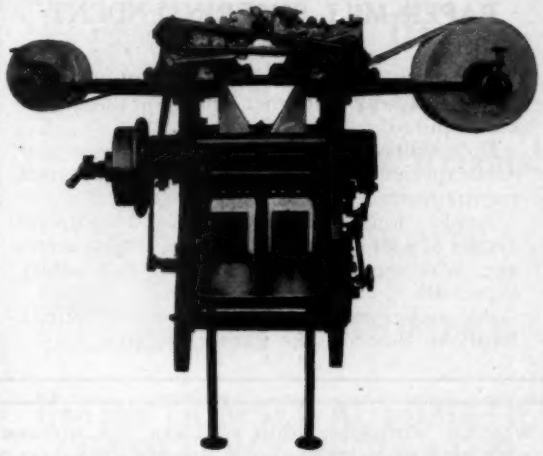
M. H. Parker, the retiring president of the International Brotherhood of Paper Makers, in his report touched on the long drawn out strike against the International Paper Company. He upheld his action in refusing to declare the strike off.

Skilled Men for Paper Union

Paper makers in Northern New York and elsewhere are interested in the outcome of a plan which will get under way shortly after the first of the year to make the International Brotherhood of Paper Makers an organization that will be limited strictly to skilled men. At the time that W. R. Smith of Kalamazoo, Mich., was making his successful campaign for the presidency, he came out openly in favor of such an organization. He declared that there were so many unskilled men in the paper makers' union that they frequently outvote the skilled men.

A meeting of the executive board will be held in Albany, Jan. 7, at which time Mr. Smith will outline his plan, which is to transfer the unskilled men in the union to some other organization.

"There has been an expressed sentiment for several years," said Mr. Smith, "for an organization, the membership of which shall be limited to the skilled workers in the paper mill



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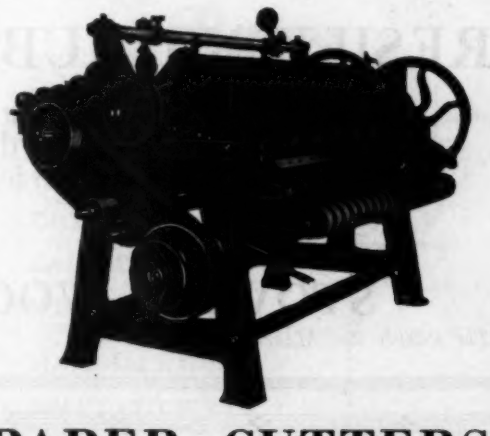

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PATENT TOP SLITTERS

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All replies will be held strictly confidential. Reply to Box 81, The Paper Industry.

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Fine Faced Felts for Fine Papers. Absolutely no felt marks in paper. TRIUNE Three Ply Felts for Coarse Papers.

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Built in sizes 1 inch to 48 inches

WYCKOFF WOOD PIPE
The Paper Industry is successfully using thousands of feet of this Pipe and they find it to be the best conveyance for Paper Stock and Acids that can be obtained.
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1855 Elmira, N. Y., U. S. A. 1925

RESILIENT RUBBER ROLLS
It is the "resilient cushion" and not the softness of the roll that takes the water out and gives maximum felt economy at the same time.
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The Rubber Roll Makers NEWTON UPPER FALLS, MASSACHUSETTS

THE WATERBURY FELT CO.
SKANEATELES FALLS
New York
FELTS and JACKETS
Top and Bottom Wet Felts for board machines, with all the qualities requisite to insure long life and continuous production.
They Satisfy

proper. I am making no claim that there are not skilled workers outside the machine room, and it would be foolish to suggest that those employed in the machine room should not be organized. A place for such a plan is provided under the present plan of the American Federation of Labor.

"What the paper makers do want, however, and I have heard it in every locality, is a paper makers' union, composed of the beater engineers and the men in the machine room who are actually employed in the manufacture of paper. All other workers around the paper or pulp mill should belong to their respective organizations that have already been provided by the American Federation of Labor.

"I will admit that the question of where the line of jurisdiction should be drawn is a delicate matter that would probably require much consideration before any decision can be reached. It is a matter which the skilled workers of the paper mills should decide."

Damage amounting to $3,000 was done to the Ogdensburg pulp terminal on the night of Dec. 28. The building was of wood construction and burned rapidly. The Ogdensburg fire department confined its efforts to saving the surrounding property. Two transformers and other equipment were burned.

Engineers have been at work several days making a survey of the properties of the International Paper Company at Glen Park. The International mills at Glen Park have been shut down since the strike several years ago. It has been reported several times that other interests were negotiating for the properties which include valuable water powers.

The new hydroelectric plant of the Power Corporation of New York, at Defereit, is nearly completed. About 15,000 horsepower will be generated which will be used to operate the St. Regis Paper mill.

Ohio News

January 1, 1926.

Howard Paper Buys Franklin Mills

Ownership of the Franklin and Excello mills of the American Writing Paper Co., at Franklin, Ohio, was assumed a few weeks ago by Maxwell Howard, of Dayton, when the two properties were sold by the receiver of the company at an auction sale in Lebanon. T. A. Jones, acting as agent for the Howard Paper Co. interests, purchased the two plants at approximately $250,000.

This is one of the most important industrial transactions in the Miami Valley in some time, particularly because a further expenditure of $1,500,000 will be made by the new owners for rehabilitation, the Franklin mill to be associated with the Howard Paper Co., of Urbana, and the Aetna Paper Co., of Dayton, while the Excello mill will be operated by Jones and his associates. The Franklin concern is to bear the name of the Maxwell Paper Co., of which Mr. Maxwell Howard will be president, and the personnel of the officers and managers will be drawn from both the parent companies.

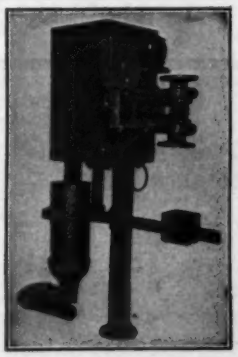
The capital of both mills is increased to $2,000,000, that at Franklin to have a capacity of 150,000 pounds of writing paper daily. Valuable water rights of the old company will lend advantageously to its output.

Both mills formerly were known as the Harding mills, having been founded by the late A. E. Harding, who, in building the mill at Excello sixty years ago, erected the first writing paper mill west of the Alleghany mountains.

Benjamin M. Bishop, for sixteen years connected with the Gardner & Harvey Paper Co., of Middletown, began his new duties the first of the year as manager of the Sonoco Products Co., at Hartsville, S. C. Mr. Bishop came to Middletown from Hackensack, N. J., and for ten years was superintendent of one of the divisions of the Gardner & Harvey company.

The offer from the Sonoco company came in recognition of his meritorious work and his knowledge of paper manufacture.

In Mr. Bishop's removal the Miami Valley Division of the Pulp and Paper Mill Superintendents' Association also loses one of its conscientious and leading members.



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One 118" Fourdrinier. One 84" Fourdrinier.

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Seventeen 36"x84". Sixteen 36"x66". Fifteen 28"x62".

CALENDERS
106" nine roll. 84" nine roll. 72" nine roll. 62" seven roll.

WINDERS
124" Warren. 122"—102"—72" Moore four drum. 82"—72" Langston.

MARSHALL DRIVE
Complete Pusey & Jones drive for paper machine.

SHEET CUTTERS
84"—70"—54" Moore & White. 60"—48" Hamblet.

REAM CUTTERS
44"—38" Twentieth Century Seybold.

LAYBOYS
102". Four 52" Erie single.
Variable speed steam engine ERIE BALL 12x12x14.
Revolvator.
Four 72" wet machines.
Two shredders, MITTS MERRILL No. 17.

SUPER CALENDERS
56" seven roll Holyoke. Four 66" Holyoke.

SUCTION ROLLS
104"—126" Millspaugh with Connersville pumps.

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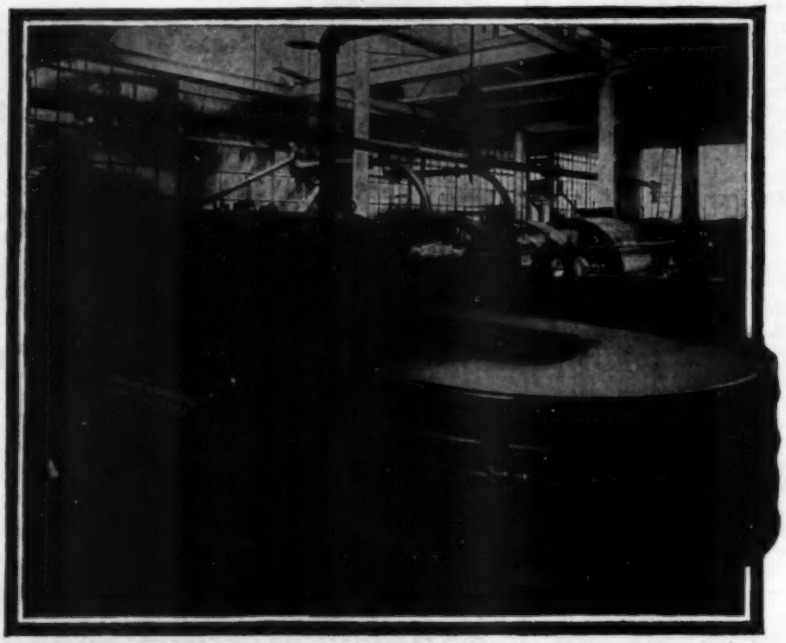

A lubricant for Beater bearings

—that gives the "film of protection" and reduces operating temperatures

THERE are many parts of paper mill machinery that are difficult to lubricate correctly—and the beater bearing is one of them. This is because such tremendous pressures are placed on these bearings. Extremely high operating temperatures result.

But according to the enthusiastic testimonials of many of our satisfied customers, we have considerably less trouble lubricating beater bearings correctly than our competitors have. And we have evidence in our files showing that beater bearing temperatures have been reduced from 250°F. to 120°F. through the use of Tycol Medium Fibre Grease—the lubricant recommended by our Engineering Bureau for beater bearings, both open and enclosed.

One of our Staff Engineers will be glad to call and present this evidence to you, and tell you more about the Tide Water Power Group.

If your beater bearings are of the open type, he has a practical suggestion for lubricating them that will make his visit doubly worth your while.

The F[illegible]TION

—for paper mill machinery

In their application to each phase of paper mill lubrication, the lubricants comprising the Tide Water Power Group form the "film of protection," *thin as tissue, smooth as silk, tough as steel.* The application of the Tide Water Power Group to your machinery will give you economical lubrication—maximum power, uninterrupted operation and increased production.

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TYCOL LUBRICANT No. 1
TYCOL YARN GREASE
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TYCOL MEDIUM FIBRE GREASE
TYCOL GEAR COATING SOFT
GRENOL STEAM CYLINDER OILS
DYNOL ENGINE AND TURBINE OILS
TYCOL LUBRICATING GREASES
CLAROL MACHINERY OILS

TIDE WATER LUBRICANTS

TIDE WATER OIL SALES CORPORATION

ELEVEN BROADWAY NEW YORK

Technical Developments in the Paper Industry

Domestic and Foreign

The following abstracts are of the latest developments found in the foreign press and the domestic and foreign patent offices. Photostats and translations of complete articles and patents can be obtained at cost price.

Manufacturing Pulp from Marine Algae

THE process which is patented in French Patent, No. 595,394, is concerned with the manufacture of a paper pulp. It is particularly concerned with the manufacture of a pulp from marine algae with the simultaneous recovery of by-products such as iodine, brominem gelose, etc. The process, which comprises several operations, takes place in the following manner:

The algae is first treated to remove all extraneous substances that it may contain and it is then washed in a wash liquor which consists of one thousand parts of commercial sulphuric acid, two hundred and fifty parts of commercial hydrochloric acid and three hundred parts of soft water. These quantities are sufficient for washing three hundred kilograms of the algae. The algae placed in this bath are subjected to a maceration which lasts for one hour during which time they are constantly agitated. Then they are removed from the bath and allowed to drip over wooden frames.

After the algae have been dried in this manner, they are placed in a digester of rotary type which contains the following solution, the proportions of which as given below are figured for the treatment of one hundred kilograms of the algae: caustic soda in slabs, twelve kilograms, pulverized Quillaya smegmadermos bark, one kilogram, and one hundred and fifty liters of soft water.

In making up this solution, the caustic soda is first completely dissolved in the water and then the powdered bark is added and the entire mass vigorously stirred so as to make a uniform mixture.

The products that are contained in the rotary digester are then treated with the aid of steam, which is admitted to the apparatus under a pressure of three to four atmospheres, and the pressure is maintained at that point for a period of eight to ten hours approximately.

The algae pulp as it comes out of the digester or autocalve, is then pressed and the water that is extracted from it is pumped away into tanks from which it is eventually drawn off and sent to another part of the plant for the purpose of extracting the valuable by-products that are contained in it. After being pressed, the algae pulp is well washed with soda water and is then sent to a bleaching hollander where it is subjected to the action of chlorine which is obtained from the electrolysis of sea water. The bleached pulp is now ready to be converted into a paper in accordance with the usual methods employed for this purpose.

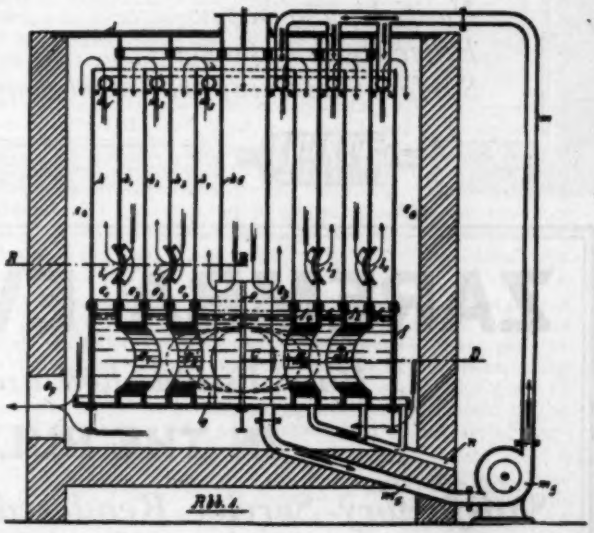
Regenerating Waste Liquor in Suphate Mills

IN CONTRADISTINCTION to the considerable losses of values that are sustained in the processes involved in the recovery of alkali, the thermal efficiency of the process for recovering the alkali values from waste liquors obtained in the sulphate mill, as described in Svensk. Pappersmasse-tidning, volume 4, page 445, 1925, is considerably lower, being from 35 to 45 per cent. From the thermal standpoint the complicated character of the process is also a great disadvantage. From the economic standpoint, moreover, an important disadvantage is the fact that the partial process, which necessitates large expense for installation of equipment and which yields the maximum amount of heat, involves the generation of steam in waste heat boilers. Certain changes in the construction of the furnaces, better generation of gas, avoidance of the entrance of excess air must be striven for. The concentration of the waste liquors can best be accomplished with the aid of steam. If the evaporation can be completely carried out without the use of rotary furnaces, then it will be possible to effect the greatest economy in the operation of the waste liquor recovery process. The entire process then gains in simplicity and the high temperature losses through unavoidable admixture of cold air are avoided.

Evaporation of Waste Liquors

The apparatus which is seen in the accompanying figure and the process which is patented in German Patent, No. 411,801, is concerned with the evaporation of waste liquors and other dilute solutions that are obtained and processed in the pulp and paper mill.

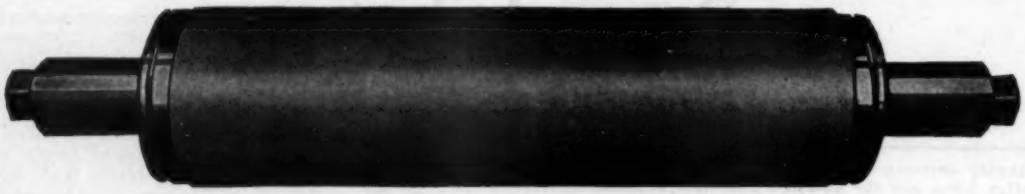
The liquid which is to be evaporated is seen in the container (e). This vessel is divided into a number of chambers



(e_1), (e_2), etc., by the walls (f), (f_1), etc. A part of these chambers, namely, (e_1), (e_3), and (e_5) serve for receiving the liquor that is to be concentrated, and these therefore form an integral space or are connected with one another by the passages (g_1), (g_2). This possesses the advantage that the greatest possible space is afforded for the liquor and only one circulating pump is required. However, it is possible in many cases to do away with the communication between the spaces (e_1), (e_3) and (e_5).

In this way the possibility is afforded for the concentration of different liquors in one and the same apparatus at one and the same time. It is also possible to conduct the concentration in a continuous fashion. Thus, for example, in the space (e_5) it is possible to precipitate flue dust. The spaces (e_2) and (e_4) then serve for the formation and collection of the condensate and can likewise be connected with one another or remain unconnected.

The hot flue gases are made to enter through the pipe (h_5). They then pass through the heating surfaces (h), (h_1), (h_2), (h_3) and (h_4) and the spaces (e_1), (e_2), (e_3), (e_4) and (e_5). At other points, the gases can also be added or mixed again. Suitable pumps are provided for conducting the liquid through the evaporator.



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Consultation invited on new projects or where existing evaporators should be rebuilt for better results

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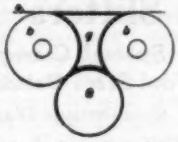
506 CROSBY BUILDING **BUFFALO, NEW YORK**

Sulphite Cellulose in Dyeing Jute Fiber

A NEW use for sulphite cellulose is in the dyeing of jute fibers, as well as coconut fibers and others of similar character. The sulphite cellulose liquor is added as such to the color bath. It is also possible to use the ingredients of the sulphite cellulose waste liquor or first to convert them into other products before they are employed. Thus, for example, lignin sulphonates can be employed for this purpose, or else the derivatives that are formed from these substances by the processes of oxidation, chlorination, dialzying, or fermentation or by treatment of these substances with acids or alkalies. An example of a color bath contains the coloring matters, Rubin crystals or methyl violet B, sulphite cellulose and acetic acid. British Patent, No. 236,525.

Suction Roll for Paper and Pulp Machines

THE illustration shows a type of suction apparatus which is patented in German Patent, No. 340,686, and which is used for the dehydration of paper, pulp and other substances. In these machines, the machine wire or the machine felt is carried by suitable rolls to form a part of the suction chamber wall and the suction space is closed below by a suitable stationary surface. Between the bottom closure (e) and the rotary surfaces of the suction chamber (b), a space is afforded which is perfectly tight. This space is seen outlined in dark lines in the illustration and the suction effect takes place therein.



Testing Paper for Permeability of Liquids

THE question of the permeability of liquids through paper is of importance in testing paper to determine its sizing quality and its resistance to water, as well as the possibility of using it for packing suction chambers of one sort or another and its resistance to printer's ink, fats and oils. The usual colorimetric tests do not serve for this purpose, for the color change that is observed in this test and on which the quality of the paper is based owes its sensitivity just to the moment at which the water penetrates through the paper. Comparative figures have been obtained in the use of a mixture of a small amount of a water soluble coloring matter which is dissolved in a very much greater quantity of a diluent which is water soluble as well and non-hygroscopic.

The purpose of this diluent is not only to disperse the coloring matter finely and cover the color in dry condition, but to absorb water which has penetrated through and to lead a part of the same to the coloring matter, which then develops its characteristic color in aqueous solution. Thus three mixtures were prepared from one gram of powdered sugar and ten milligrams of a water soluble coloring matter. The first mixture contained fuchsin, the second a green coloring matter and the third a yellow coloring matter. A little of each mixture is shaken out on a screen which has thirty meshes per centimeter so that the individual ingredients come into contact with one another but still do not flow over each other.

A sheet of paper, about five centimeters wide to five centimeters long, whose edges are bent around so as to make the same somewhat stiffer, is then placed under the screen and is then daubed lightly but uniformly with a brush that has been dipped into the indicator solution and then it is placed on a water surface at a definite temperature. This time point is noted by starting a stop watch.

As soon as all three coloring matters have assumed the characteristic color which they possess in an aqueous solution, the time is noted again and the test is completed. In examining papers of different degrees of thickness, it must be considered that the time of penetration of the water increases with the square of the thickness of the paper. Paper Maker, 1925, page 95.

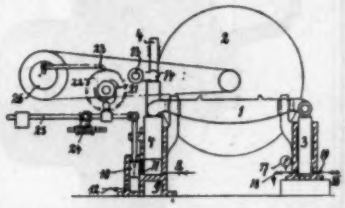
Beating Duration in Paper Manufacture

IN WORKING up rag stock, chemical wood pulp and esparto grass or straw, maximum production is to be expected from the beaters only when the beater knives and the bedplate of the beater are made of such materials and so designed as to be suited to the peculiar character of the stock. Determinative for such production is the number of abrasions of the fiber that are made in a unit period of time which is determined by the number of beater knives and the circumferential velocity of the beater roll. Of particular importance are the weight, the direction of travel and the admixing powers of the roll. By the latter is meant the effectiveness with which the beater roll mixes the water and pulp fibers together. Then again the properties and characteristics of the knives themselves are of importance, particularly their thickness, their hardness, their ability to withstand both chemical and mechanical influences. Bronze knives seem to give the best of results. The circumferential speed of the rolls and the speed of travel of the contents in the beater trough must be selected in such a manner that best conditions for beating are obtained, but it is still a much mooted question as to how best to control these speeds in the best possible way. L'Industrie papeterie, 1925, page 202.

Automatic Control of Beater Roll in Beaters

THE apparatus that is patented in German Patent, No. 392,324, and which is shown in the accompanying illustration is concerned with the lifting and lowering of the beater roll in a beater, which action is accomplished automatically.

The arm (1) which supports the beater roll is connected with the pistons (3) and (4), shown at either end of the arm in the illustration. The piston (3) serves for the purpose of lifting the roll (2) under certain conditions from contact with the bedplate of the heater, while the piston (4) makes it possible automatically to establish any desirable distance separating the lower part of the roll from the bedplate. For this purpose, there is provided a pump which compresses a fluid and sends it through the pipe line (8) into the cylinder (4) with the result that the piston is raised the desired distance. This distance is determined by the flow of liquid out through the openings (11), which are exposed as the piston rises in the cylinder. This is easily seen in the figure. The liquid then flows back into the pump.



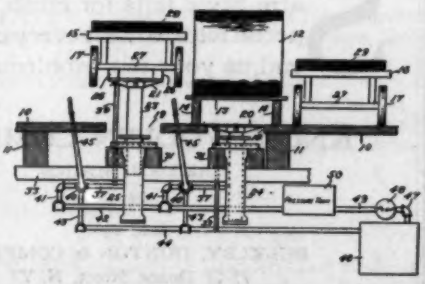
The position of the piston (4) then depends on the position of the pipe (10) and this can be adjusted at the desirable point. In order that the raising and lowering of the roll (2) is carried out parallel to the bedplate of the beater, the movements of the piston (4) and of the supporting arm (1) are transmitted in corresponding manner by means of the lever (14) which is fixed to the shaft (13) to the second bearing of the roll (2).

The automatic operation of the device is effected by adjusting the latch (23) so that it engages at the proper point with the teeth of the latch wheel (22). This allows the lifting of the beater roll to the proper distance above the bedplate of the beater.

Sorting Paper

UNITED States Patent, No. 1,563,747, is concerned with a method and apparatus for sorting paper, as may be seen from the accompanying illustration.

The apparatus is seen to be constituted of a support on which is placed a stack of unsorted paper. There are also supports for the stacks of sorted papers, so that the rejected paper is kept separate from the accepted sheets of paper. A mechanism is provided for relatively moving the unsorted paper and accepted paper supports in a vertical direction.



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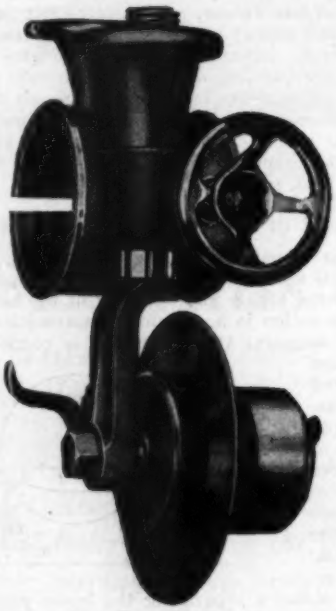
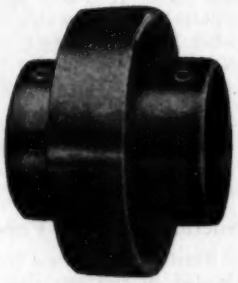


Complete



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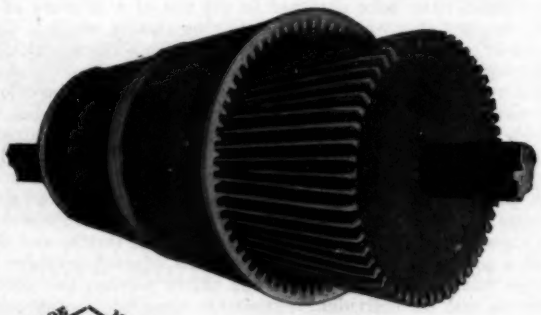

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Solubility of Sulphur Dioxide in Calcium Bisulphite Solutions

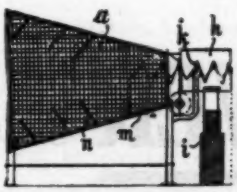
In the manufacture of sulphite cellulose, steam may be saved in actual digestion by utilizing the heat of the waste gas and liquor to heat the following charge. The acid may be heated to a higher temperature in an open vessel without undue loss of sulphur dioxide than is generally believed. The solubility of sulphur dioxide in water obeys the Dalton's law, except below a temperature of 40 degrees C, where there is a slight deviation due to the formation of sulphurous acid. The solubility is increased by the presence of sodium sulphate, but diminished by sulphuric acid and by calcium bisulphite. At the concentration of the bisulphite usual in the digestion process, the solubility is diminished ten to twenty per cent between the temperatures of 40 and 70 degrees C.

If the acid is preheated, loss of sulphur dioxide may occur through incomplete absorption from the waste gas and from loss to the atmosphere while the acid is being pumped into the boiler. The former loss is reduced by blowing the gas through an ejector fed with the fresh acid, this being more efficient than the usual absorber. The pumping loss is reduced by admitting the acid to the bottom of the boiler. It then mixes with the air less than when pumped through the top. The loss can then be reduced still further by filling the boiler with steam and so displacing the air. It is calculated that preheating the acid to a temperature of 50 degrees C saves 260 kilograms of steam, and to a temperature of 70 degrees C, 520 kilograms of steam per ton of ninety per cent cellulose. If heated to a temperature of 70 degrees C, half an atmosphere of excess pressure is necessary to prevent undue loss of sulphur dioxide.

For further details see Papierfabrikant, 1925, volume 23, pages 633-6.

Cleaning Device for Old Dry Paper

THE new apparatus which is patented in German Patent, No. 391,472, and which is seen in the accompanying illustration, consists of a cone-shaped screen drum (a). At both ends of the drum (a), there are found metallic rings which are rotatable on a pair of rolls. The drum (a) is set into slow motion by means of a chain drive or any other suitable form of drive. The charging funnel (h) remains stationary to the foundation (i). A worm gear device (k) is located in the charging funnel (h) and this worm gear has one end which is rotatable while the other end is fastened to the screen drum (a). In this manner, the worm (k) rotates in conjunction with the drum (a) and the old paper is squeezed into the screen drum (a). The paper must come out of the funnel at the other end perfectly cleaned and at the greatest speed in order to make the capacity of the apparatus as large as possible. For this purpose the drum is made short and at a rather sharp angle to the horizontal.



For the purpose of thoroughly cleaning and removing as far as possible all the foreign matters which may be admixed with the old paper through the wide openings in the jacket of the drum (a), it is necessary that the old paper be thoroughly agitated and turned round and round during its treatment. For this purpose, there are provided along the longitudinal sides of the drum a number of arms (n). Just as soon as the drum rotates, the arms (n) are buried in the mass of old paper, with the result that the paper is continually being turned over and subjected to quite a thorough agitation. This has a material effect in enhancing the effectiveness of the apparatus and in aiding in the removal of foreign materials that are admixed with the old paper.

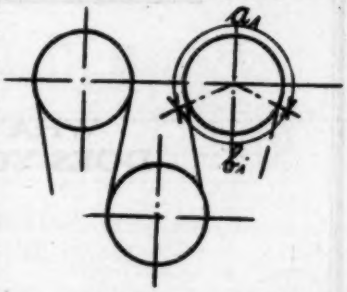
Producing Pulp

ACCORDING to United States Patent, No. 1,565,090, which is concerned with a process for the manufacture of pulp, the steps involved include the partial filling of the digester with the cooking liquor, the feeding of the material into the partially filled digester to such an amount that free circulation of the material in the digester is possible during the cooking process. Then the remainder of the cooking liquor is filled into the digester in order to complete the charge.

Calculating Theoretical Drying Surface of a Drying Part

THE figures are based on the gross production of the machine in paper or pulp per day of 24 hours. This figure is given and it is required to calculate in the first place the quantity of water that will have to be evaporated per hour. This is given by the formula, $W = Gt. \frac{W_a - W_t}{100 - W_a}$. W is the quantity of water that has to be evaporated; Gt is the paper that has to be dried in kilograms per hour; W_a is the moisture in the paper at the time it enters the drying machine; W_t is the moisture by percentage in the paper as it leaves the dryer.

The total heat consumption can then be calculated when the specific heat of the materials are known. Thus in the first place, there must be taken into consideration the heat of evaporation, v, of one kilogram of water at atmospheric pressure which is approximately 640 calories, when the initial temperature of the water is 15 degrees C. Then v_1 is equal to 640 less 15 or 625 heat units per kilogram of water to be supplied to the water. Then W × 625 is equal to x heat units per hour.



The heat consumed in heating up the materials themselves, that is the paper and pulp, as well as the heat that remains in the water which remains in the pulp and paper must be taken into consideration. The specific heat of paper and the water remaining in it can be taken as 0.65. The heat consumption is then Gt = (100—15). 0.65 = y heat units per hour, for heating up the paper and the water contained in it. Then the total heat consumption is x + y.

The next step is to calculate the quantity of steam required for the operation. This depends on the pressure of the steam. Thus steam at the pressure of one atmosphere contains approximately 647 heat units, but steam at 2.5 atmosphere pressure contains approximately 653 heat units. Condensate at 110 degrees C. has approximately 110 heat units per kilogram. Hence it follows that in the case of the one atmosphere steam, the heat that can be utilized amounts to 647 — 110 or 537 calories per kilogram of steam and at 2.5 atmospheres pressure, this amounts to 653 — 110 or 543 calories per kilogram of steam. This factor may be considered as Z_n. Then the theoretical consumption of steam is $\frac{x+y}{Z_n}$ kilograms.

This efficiency of the drying part of the machine is generally assumed to be seventy per cent, so that the actual consumption of steam will then be equal to $\frac{a}{0.7} = b$ kilograms of steam per hour. Then it is possible to convert these figures to the basis of one kilogram of paper, and we thus have $\frac{b}{Gt} = c$ kilograms of steam per kilogram of paper.

The final point is the calculation of the theoretical drying surface. This is carried out in accordance with the following formula:

$$Q = F.K.(t_2 - t_1). \quad \text{Whereat } F = \frac{Q}{K(+_2 - t_1)}.$$

In this formula Q is the quantity of heat required, x plus y in calories. F is the area of the drying surface, K is the coefficient of transmission of heat, t_2 is the temperature of the steam and t_1 is the temperature of the material (water and paper). The difficulty lies in obtaining a value for K,

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which is free from objections, in determining the drying surface which is active, and in determining the losses which occur due to the fact that part of the drying cylinder does not come in contact with the paper.

F in the formulas refers to the area which is in contact with the paper and therefore for practical purposes, it is essential to use an efficiency factor of 70 per cent in the calculations. As may be seen from the figure, the question is how large is the part a_1 with respect to the part b_1 and what ratio must be employed in calculating the area of drying surface. Wochenblatt fuer Papierfabrikation, 1925, pages 1278-9.

Rotary Knot Catcher

GERMAN Patent, No. 392,041, is concerned with a rotary apparatus for removing knots and extraneous materials from paper pulp.

In order to prevent the carrying along of the stock water and the formation of foam in the case of slow stuff, the drum, as is shown in the accompanying figure, is arranged in an eccentric position by the usual means. That is the rotating drum (d) is arranged eccentrically with respect to the screen drum (a). The drum (d) is a perfect cylindrical body with a smooth surface. The number of pulsations that are produced in the back water are so many that the normal course of the stock is not affected in any injurious manner. The eccentricity of the drum (d) is adjustable.

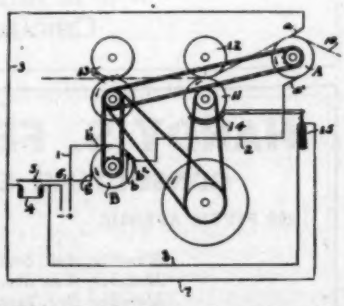
The lowest position of the drum (d) is shown in the figure, and the position 180 degrees removed is shown on the dotted lines. These positions show that the distance which separates the drum (d) from the screen drum (a) is always varying. The greatest part of the internal surface of the screen drum (a) is surrounded at all times by the drum (d), so that the quantity of stock which is found in the interior of the screen drum (a) is always very small, and only a small quantity of stock-water mixture is necessary for filling the knot catcher.

Due to the smooth surface of the drum (d) when it rotates, it does not carry with it any of the stock mixture, so that the formation of foam is prevented when the drum (d) is removed from time to time from contact with the stock mixture. The cylindrical drum (d) passes quietly through the back water at all times and exerts on the same a pure suction and pressure action without any shock or splash. In order to regulate the action of the drum (d), the latter can be fastened to its shaft in such a manner that its eccentricity can be changed at will.

Feeding Device for Paper Webs

IN UNITED STATES Patent, No. 1,564,794, there is patented a device for feeding paper webs, as may be seen from the accompanying illustration.

This apparatus is provided with means for retarding or increasing the relative rate of feed or delivery of the material according to whether a perforation in the material arrives early or late with respect to a predetermined normal moment of arrival at a stationary detector or detectors and in respect to the arrival at a certain point of a moving element. This element does not make contact with the material and is timed to arrive at that point in synchronism with the operation of the severing or other device.

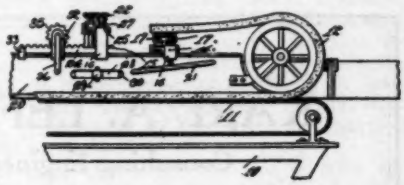


Washing Pulp in Beaters

THE article which is published in Giorn. Chim. Indus. Applic., 1925, pages 134-7, describes the development of a formula which may be employed in determining the theoretical efficiency of drum washers in bleaching beaters or ordinary beaters, for the purpose of eliminating the last traces of chlorine that remain behind in the pulp after the bleaching process. It is also demonstrated from practical experience that the practical results are always less effective than those that are obtained by calculation, which is due either to the inherent difficulties that are caused by the physical and chemical characteristics of the materials that are being washed. What is referred to, for example, is the presence of organic substances contaminating the fibers which are difficult to wash out. Or this is due to the errors that are made in the construction of the beaters themselves. There are also discussed in this article other machines used for the same purpose, such as special helicoidal presses, centrifugal dryers, suction beaters, etc.

Paper Making Machine

THE illustration shows a Fourdrinier machine with an improvement as patented in United States Patent, No. 1,564,728. In this machine there is provided a longitudinally slotted deckle frame which has slices which are adjustable in a vertical and longitudinal direction on the frame. One of these slices has guiding and retaining means which are engaged through the slotted frame. A toothed member, shown at (33), is also provided on the frame, and this is operatively connected by means of the gear (35) with the last named slice. The gear (35) serves for the movement of the last named slice.



Preventing Corrosion in Steel Digesters

A PROCESS is described in United States Patent, No. 1,566,118, for the prevention of the corrosion of steel digesters. This process consists in the addition of a sodium salt of a weakly ionized polybasic acid to an aqueous solution of sodium sulphite which is to be used in the pulping of wood. The operation is carried out in a steel digester. Then there is added to the digester a solution of sodium hydroxide while the digestion is going on, and this solution is allowed to mix thoroughly with the contents of the digester. This solution has the effect of preventing the corrosion of the metal of the digester.

Book on Colloid Chemistry

Under the title "Colloid Chemistry, Theoretical and Applied," Dr. Jerome Alexander, of New York, has written and edited a series of papers which will be published shortly in three volumes by the Chemical Catalog Company of New York. Contributors to the volume represent every civilized country, and one of the chapters on "The Effect of Emulsoids on Colored Solutions," is by two Chinese chemists, Hsien Wu and Daisy Yen Wu. Vol. I on Theory and Methods comprises 59 papers. Vol. II deals with biology and medicine and Vol. III with technology. In all, 175 papers will constitute the volumes. Among the contributors are Jerome Alexander, E. Buchner, Robert A. Millikan, W. H. Bragg, Albert Einstein, William E. Gibbs, Irving Langmuir, Richard Zsigmondy, The Svedverg and Sven Oden, the last named writing on "Sedimentation—Analysis and Its Application to the Physical Chemistry of Clays and Precipitates."

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New York — Chicago — Pittsburgh — Boston

New York, January 2, 1926.

THE NEW year opens with very favorable prospects for the paper industry. Predictions of leading bankers, economists and business men are almost without exception for good business in 1926; sentiment seems to be general that this year will witness steady and healthy trade activity, and that business will show gradual expansion. Obviously, if general business is active there will be a good demand for paper of nearly all kinds because paper is a commodity used in numerous trades. The outlook certainly is highly encouraging, business in the closing months of the old year has been excellent and there appears every reason to believe it will continue so throughout 1926.

Some slowing down of demand for certain kinds of paper has been noted in recent weeks, apropos of the holiday and inventory period. This, however, is a seasonal condition only and has had little important effect on the market situation. Jobbers and consumers in general have curtailed their buying while taking year-end stock figures and while getting their affairs in shape for the year's close, yet the movement of paper from mills into consuming channels has kept up in fairly large volume, while the undertone of the market is firm without a doubt. The little lull in demand has not disturbed prices; there is a strong tone to prices of practically all classes of paper, and it can be said the tendency in some cases is upward decidedly. The likelihood is that business will open up in a broad manner right after the turn of the year or as soon as the trade rids its system of the holiday spirit.

Latest statistics issued show that production of paper is keeping up on a high level. Newsprint output in the United States during November amounted to 130,102 tons and shipments from mills to 133,199 tons, according to the News Print Service Bureau. Production in Canada amounted to 132,148 tons and shipments to 131,199 tons, making a total United States and Canadian production of 262,250 tons and shipments of 265,141 tons, compared with 272,731 tons produced and 282,186 tons shipped in October. There was also 11,445 tons of newsprint produced in Newfoundland and 1,036 tons in Mexico in November, so that total North American production for the month amounted to 274,231 tons, and for the first eleven months of 1925 to 2,866,782 tons. Comparing production during the first eleven months of the year with the same period of each of the five previous years, the United States mills made 3 per cent more than in 1924, 2 per cent more than in 1923, 5 per cent more than in 1922, 24 per cent more than in 1921, and about the same as in 1920, while Canadian mills produced 11 per cent more than in 1924, 18 per cent more than in 1923, 40 per cent more than in 1922, 89 per cent more than in 1921, and 72 per cent more than in 1920. The combined production of the two countries for the first eleven months of 1925 was 7 per cent greater than in 1924, 9 per cent more than in 1923, 20 per cent more than in 1922, 50 per cent more than in 1921, and 27 per cent over 1920.

The Department of Commerce's monthly statistical review of the box board industry shows that production of board decreased slightly during November as compared with the several previous months, this being a seasonal development. United States mills—89 concerns operating 111 plants reporting—produced a total of 190,136 tons of board of all kinds in November, against 204,492 tons in October. Mills produced at a 101 per cent capacity basis during November, operating a total of 7,770,106 inch hours, as compared with 8,438,784 inch hours in the preceding month. Orders received for board in November called for 192,451 tons, contrasted with 207,178 tons in October, while unfilled orders at the end of November amounted to 102,786 tons, against 101,981 tons at the end of the preceding month. Shipments of board from mills in November totaled 181,646 tons, compared with 213,019 tons in October, and stocks on hand at mills at the end of November aggregated 44,541 tons, against 46,054 tons at the end of October. Production of board in the first eleven months of 1925 totaled 2,082,550 tons, against 1,974,116 tons in the corresponding time of 1924.

The improvement in the paper and pulp industry is reflected in the employment and wage figures for October issued by the Bureau of Labor Statistics of the Department of Commerce. Reports received by the Bureau from 207 paper and pulp plants, which reported their employment in September at 53,618, increasing in October to 54,853, an increase of 2.3 per cent. The payrolls in these plants also increased from $1,347,954 in September to $1,468,684 in October, a gain of 9 per cent. The employment in the same plants in October, 1924, was 52,381, and the payrolls amounted to $1,387,304.

The new contract price of $65 per ton f. o. b. mills officially goes into effect today. It seems something of a novelty that with activity among newsprint mills on probably a greater scale than ever before, and with demand for print paper very brisk and voluminous, prices should be lowered. However, it is likely the reduced price has stimulated buying to some extent as it is reported publishers appreciably increased their tonnage in making contracts for 1926 shipments. The newsprint market is very firm. The consumption has been hitting the high spots during the past couple of months, and it is not going too far to state that manufacturers have been obliged to push production to take care of all the demand. The outlook is for a continuance of big consumption. Advertising in the daily press is on a large scale and publishers are printing big issues to carry all the business offered them; moreover, circulation is holding up to a high mark and in many localities is on the increase.

Book paper manufacturers are in a fairly favorable position. Most of them are well fixed with orders absorbing their production over the next few weeks, contract mills especially being sold well ahead. The transient demand for book paper has broadened recently and this has helped those plants depending on current buying by consumers. Prices are steady with a hardening tendency evident.

Fine papers are in fair demand. Most mills in New England and elsewhere could readily accommodate more business than they are securing, yet production is on a moderately large scale. Prices display much firmness and in some instances slight advances have been put into effect on certain lines of bonds and ledgers. The demand continues to favor to a pronounced degree the cheaper lines of writing papers, mills experiencing considerable difficulty marketing usual amounts of high-grade rag papers.

Coarse papers are steady in price and in more or less consistent movement. Wrapping enjoyed a very active preholiday season, and so did tissue. Building papers are seasonably quiet, yet reports say there is a better demand than ordinarily is the case at this time of the year.

Box boards are expected to pick up in activity shortly after quieting down prior to the holidays. Quotations on board are none too firm, and a cut of $5 a ton on plain box boards was put into effect early in December. Chip is now quoted at $40 a ton for New York delivery, and news board of filled quality at $42.50.

Atterbury Bros., Inc., of 145 Nassau street, New York, importers of and dealers in paper mill supplies, announce that they have made some changes in their paper stock department whereby this department will be in charge of J. J. Byrnes and William Roach, both of whom are well known in the trade.

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Domestic Raw Materials

Papermaking Rags

Probably not in a long time has the market for papermaking rags experienced so quiet a period as during the past few weeks. It is the customary thing for papermakers to curtail their buying when the end of the year approaches, as they usually are bent on keeping stocks down for inventory, but the month of December just closed was an exceptionally dull period for rags, business being of very narrow compass and of a character anything but satisfactory to rag dealers.

As would be expected, and as invariably is the case when demand subsides, prices recorded some recession. The downtrend in values has been quite orderly and of no broad dimensions, yet the trend has been almost steadily in a lower direction, and indications are it will require considerable buying on the part of paper mills to start an upward trend in prices of certain classes of rags. On the other hand, there are some grades which are in a statistical position where the least expansion of demand doubtless would send values bounding higher immediately.

While signs point to present supplies of rags being ample to fill the requirements of paper mills of the country, and although prices today are on a more advantageous level than has been the case in a year or longer, it must be said the rag situation is not all that could be hoped from the angle of the paper manufacturer. In fact, there is much danger lurking in the market condition. Prices of many kinds of rags have declined to a point where the production in the United States has been seriously reduced; this does not mean that larger supplies are not to be had but that collectors all over the country have curtailed their gathering of rags; first, because there is little profit afforded them in doing so, and, second, because common labor of a class which collects waste materials is scarce and much more remunerative work is offered in other lines. Another highly important factor is that paper mills have consumed fewer rags in recent months than, in proportion, ever before, especially as concerns the better grades of old cottons. The reason for this is that demand has been proportionately greater for sulphite bonds and ledgers than for high-grade rag writing papers, with the result collectors and packers have had a narrow outlet for their better qualities of rags on which they ordinarily realize the larger amount of their profits.

It is true the real condition of the rag situation has not been driven home to most paper manufacturers, largely because importations of all varieties of papermaking rags have been so heavy throughout 1925 that the condition developed in the domestic rag market has been more or less under cover. It is, nevertheless, a serious matter for papermakers. The large supply of rags secured from Europe last year is not always to be obtained, and sooner or later paper mills will be obliged to look to domestic sources to fill their wants. When this time comes there is no saying what will happen to prices, because a situation has been permitted to arise in this country that is dangerous to an extreme, and that is liable to run prices up to prohibitive levels.

The position of the market at present is such that buyers willing to make offers are enabled to get the rags desired at almost any price within reason. The slow movement of old whites and blues into consuming channels for some time past has led to accumulations of these rags, and obviously some dealers are anxious to liquidate stocks; on the other hand, the supply situation in roofing rags is very bullish, there is practically none of this class of rags stored up excepting in the hands of mills, while available supplies of new cuttings of most kinds are small, the production of new rags having been limited for some time.

The greatest firmness in the market at the moment is in roofing stock. Dealers are cautious in booking orders for domestic roofing, and are demanding prices of around 2 cents a pound at shipping points for No. 1 packing and 1.85 cents for No. 2 roofing stock. Foreign dark cottons are quoted generally at 2 cents ex dock New York for forward shipment from abroad, and close to the same price is asked for spot lots.

Old white rags are quoted at around 7 cents per pound f. o. b. dealers' points for No. 1 repacked, and 4.50 cents for No. 2 repacked whites. Repacked thirds and blues are available at 3.50 cents at shipping points, and rough blues at 2.25 cents.

New cuttings of most description have eased a little in price, due to the lack of important buying by papermakers. Indications are dealers are carrying light stocks of new rags, some grades being very difficult to locate in usual quantity. Nevertheless, the slow holiday and inventory period witnessed a slight weakening of values, and No. 1 white shirt cuttings are reported available at 14.50 cents per pound at dealers' shipping points, fancy shirt cuttings at 8.75 cents, unbleached muslins at 14.50 cents, light silesias at 10.75 cents, washables at 7 cents, and blue overall cuttings at 10.50 cents.

Average quotations f. o. b. shipping points and ex dock New York are as follows:

New Stock—	New York and Chicago
White shirt cuttings, No. 1	14.50-14.75
White shirt cuttings, No. 2	10.00-10.25
Fancy shirt cuttings	8.50- 8.75
Washables, No. 1	7.00- 7.25
Unbleached muslins	14.50-14.75
White lawns	12.50-12.75
Overall cuttings, blue	10.50-10.75
Black silesias	5.75- 6.00
Light flannelettes	12.00-12.25
Canton flannels, bleached	12.00-12.25
Canton flannels, unbleached	11.75-12.00
Shoe cuttings, bleached	13.00-13.50
Shoe cuttings, unbleached	12.00-12.50
Light silesias	10.50-10.75
O. D. khaki cuttings	7.25- 7.50
Mixed khaki cuttings	6.50- 6.75
Corduroy cuttings	5.50- 5.75
Cottonade cuttings	5.00- 5.25
Linens, No. 1 white, foreign	15.00-15.50
Light prints, extra, foreign	3.25- 3.50
Old Stock—	
Whites, No. 1, repacked	6.75- 7.50
Whites, No. 2, repacked	4.00- 4.50
Whites, house soiled	3.00- 3.25
Whites, street soiled	2.50- 2.75
Lace curtains	6.50- 7.00
Thirds and blues, rough	2.25- 2.50
Thirds and blues, repacked	3.50- 3.75
Black stockings	4.50- 4.75
Cotton canvas, No. 1	5.75- 6.25
White cotton batting	4.75- 5.00
Roofing, No. 1	2.00- 2.10
Roofing, No. 2	1.80- 1.90
Dark colored cottons, foreign	1.95- 2.05
Blue linens, foreign	5.00- 5.25
Gray linens, foreign	5.25- 5.50
White linens, foreign	9.50-10.00
Light prints, extra, foreign	2.50- 2.75

Rope and Bagging

Although the market for old rope has been under the quieting influence of the holiday and inventory period, there appears to be sufficient buying by paper mills to sustain values, and prices show little change of importance. Domestic old No. 1 manila rope is fetching 6.25 cents a pound or there-

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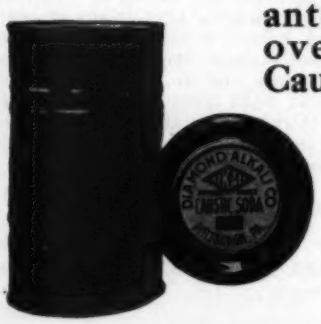

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abouts at dealers' shipping points, while foreign No. 1 old rope is bringing 5.50 cents ex dock New York. Dealers state available supplies are small and that this is the principal factor in maintaining prices. Old strings are in fairly good demand and prices rule steady at 1.75 to 2 cents a pound f. o. b. shipping points for mixed strings.

The market for old bagging is firm. Prices of roofing bagging have eased slightly, but this has been due to a readjustment of values in accordance with the prevailing prices of roofing rags; otherwise, scrap bagging displays considerable price steadiness, and it is contended by dealers that the supply situation is such that any increase in demand would result in a strengthening of values at once. It is quite evident old bagging is in low supply. There has been a larger consumption for purposes other than papermaking since the sharp rise in raw jute prices, and indications are old bagging of all qualities will remain high in price for sometime or at least until the next jute crop in India comes forward.

No. 1 scrap burlap bagging is quoted at 3 cents a pound at shipping points, and roofing bagging at 1.65 to 1.75 cents. Old gunny bagging is firm at 4 cents or higher at dealers' points.

F. o. b. shipping point and ex dock New York quotations follow:

	New York and Chicago
Gunny, No. 1 domestic	4.00-4.25
Gunny, No. 1 foreign	4.00-4.25
Scrap bagging, No. 1	3.00-3.25
Roofing bagging	1.65-1.75
Wool tares, heavy	4.25-4.50
Wool tares, light	4.00-4.25
Manila rope, No. 1 foreign	5.25-5.50
Manila rope, No. 1 domestic	6.25-6.50
Sisal strings	3.00-3.25
Mixed strings	1.75-2.00

Old Paper

A steady downtrend has marked prices of old paper and the market has exhibited little activity of important character in any of the large paper stock centers of the country for some time. Signs are board mills and other consumers are well fortified with stocks on hand, and buying recently has been of very limited scope, with the result, as invariably is the case when the movement of supplies slows down, prices have receded practically without a let-up. In fact, values have worked down so low that packers have curtailed production greatly, their claim being there is no profit in collecting and preparing stock for shipment to mills.

The decline has been especially marked in the low grades. No. 1 mixed paper is selling in the East at 40 cents a hundred pounds f. o. b. New York, and possibly at less than this figure. Folded news is quoted at 60 cents at shipping points, and overissue news at 75 cents. Shavings are quoted around 3.70 cents per pound for No. 1 hard white, and 2.90 cents for No. 1 soft white shavings. Flat stock is quoted at 1.00 to 1.15 cents per pound for heavy No. 1 books, and 80 cents a hundred pounds for crumpled book stock. Old kraft paper is selling at 2.25 to 2.35 cents a pound, No. 1 manilas at 75 cents, and white blank news at 1.75 cents.

The following are prices f. o. b. shipping points:

	New York and Chicago
Hard white shavings, No. 1	3.60-3.80
Hard white shavings, No. 2	3.00-3.25
Soft white shavings	2.80-2.90
Colored shavings	1.15-1.30
Heavy book, No. 1	1.00-1.15
Crumpled book, No. 1	.75- .85
Ledger stock	1.50-1.70
Kraft, No. 1	2.25-2.75
Manilas, No. 1	.75- .85
White blank news	1.70-1.80
Over-issue news, No. 1	.70- .75
Folded news	.60- .65
Sulphite mill wrappings	.65- .70
Mixed paper, No. 1	.40- .45
Common paper	.25- .30

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Pulp Wood

The market for pulp wood is firm and quotations tend higher, reflecting the active demand for ground wood and other pulps and the fairly heavy consumption of wood. Contracts are being placed for wood for next year's delivery and it is reported pulp manufacturers are ordering in unusually large volume, indicating they expect the activity in the pulp markets to continue. Prices at up-State points in New York are around $19 per cord for peeled wood and $23 a cord for 2-foot rossed wood; in some cases well above these rates are quoted.

Exports of pulp wood from Canada in November reached a total of 61,608 cords, valued at $627.411. Exports during the first eleven months of 1925 showed a big gain over the same time of 1924, amounting to 1,351,728 cords, valued at $13,469,975, against 1,260,777 cords of a value of $12,886,-192. Exports in 1925 showed an average value of $9.96 per cord.

Mechanical Pulp

A firm tone characterizes the market for mechanical wood pulp, and, according to the latest available figures concerning production, stocks, etc., the statistical position is becoming stronger as the winter progresses. For example, production of ground wood by United States mills in October, totaling 90,393 net tons, was some 25,000 tons larger than in the preceding month, yet mill stocks at the end of October were reduced some 8,000 tons, amounting to 129,932 tons as compared with 138,233 tons at the end of September. Obviously, this indicates consumption of ground wood is very heavy, which actually is the case, according to reports from reliable trade sources. The active operations of newsprint mills has resulted in very large tonnage of mechanical pulp being used, and consumption in other directions has been heavy also.

Prices show an upward trend. Domestic grinders are offering in a sparse manner, having little pulp to sell while bent on conserving supplies against their own requirements. Around $33 or $34 a ton f. o. b. pulp mills is the quotational level of domestic ground wood of prime spruce quality, while manufacturers in Canada quote from $29 a ton upwards at shipping points, depending on the air dry test and the haul to consuming centers. In some instances, it is said, Canadian ground wood has been sold at $32 and $33 per ton. Little ground wood is being imported from European sources, owing to the high prices prevailing on the other side of the Atlantic. Importers state they have to secure about $37 to $38 a ton ex dock New York in order to bring in pulp from Scandinavia at a profit.

Chemical Pulp

Prices of chemical wood pulp are steady to firm, and reports almost without exception tell of mills in this country operating at good capacity and in most cases speeding up production to take care of the growing demand from customers. It seems as if paper and board manufacturers are directing more attention to domestic and Canadian pulp, as it has been predicted they would when the pulp situation in Scandinavia began to tighten up. Contracts have been placed with domestic mills involving appreciably large tonnage which, it is stated, will keep producers in the United States well occupied for some time. Mills in Canada also are well engaged and are sold up for a good while ahead.

There is an advancing tendency in quotations on some classes of pulp. It is reported No. 1 unbleached sulphite is selling at 3 cents a pound freely and that some brands have brought well above this price. Bleached sulphite of No. 1 quality is quoted firmly at a minimum of 4 cents a pound at pulp mills and some grades range in price up to 4.75 cents. Kraft pulp is quoted at 3 to 3.25 cents a pound at producing points, and bleached soda pulp at 3.50 to 3.75 cents.

Production of chemical pulp by U. S. mills in October totaled 108,403 net tons, compared with 95,340 tons in September, 97,905 tons in August, and 91,807 tons in July, according to the American Paper and Pulp Association's reports. Stocks at pulp mills at the end of October amounted to 19,-

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White sulphite	11.30
Colored rag	15-40
Colored sulphite	10-30
Ledger—	
White rag	17-40
White sulphite	13-30
Colored sulphite	12-30
Colored rag	16-40
Bonds—	
White rag	16-40
White sulphite	9-30
Colored sulphite	9-30
Colored rag	15-40
Book—	
No. 1 S. & S. C.	6.50- 8.00
Machine finished	6.00- 8.00
English finished	6.25- 8.00
Coated and enameled	8.00-14.00
Lithograph, M. F.	9.00-15.00
Newsprint—	
Rolls, contract	3.25- ....
Rolls, transient	3.50- ....
Sheets	3.75- 4.00
Side runs	3.00- 3.25
Cover Stock—	
Coated, both sides	10.25
Coated, one side	10.15
Tissue—	
No. 1 white, 20x30	.80- .90
No. 2 white, 24x36	.75- .80
No. 1 manila, 24x36	.75- .80
Kraft	.90- 1.00
Wrapping—	
No. 1 Kraft	5.75- 6.50
No. 2 Kraft	5.25- 5.75

Boards—	New York and Chicago
Solid news	45.00-50.00
Straw	50.00-55.00
Plain chip	40.00-42.50
White coated chip	55.00-60.00
Manila coated chip	50.00-55.00
Binder's board	70.00-75.00

Chemical Pulp

(*Continued from page* 1671)

160 tons, against 20,727 tons of all grades of chemical at the end of September.

F. o. b. pulp mill quotations are as follows:

Bleached sulphite	4.00-4.75
Easy bleaching sulphite	3.10-3.35
Unbleached sulphite, No. 1	3.00-3.25
News grade sulphite	2.75-3.00
Soda pulp, bleached	3.50-3.75
Mitscherlich, unbleached	3.25-3.75
Kraft, No. 1	3.00-3.25
Screenings, refined	1.50-1.75

Chemicals

Most of the recent activity in the chemical markets has revolved around the placing of contracts covering 1926 shipments. Reports say that paper and pulp manufacturers have bought in fairly large volume, and prices of most chemicals display steadiness. Current business is somewhat limited as the market has not yet fully recovered from the quieting effects of the holiday and inventory season.

Average quotations are as follows:

Alum, lump ammonia	3.50- 3.75
Alum, lump starch	3.75- 4.00
Blanc fixe, powder	3.75- 4.25
Bleaching powder	2.00- 2.40
Brimstone (long ton, at mine)	15.00-16.00
Casein (duty paid)	13.00-15.00
Caustic soda, spot delivery	3.10- 3.15
China clay, domestic washed	12.00-16.00
China clay, foreign	15.00-20.00
Rosin, grade E	15.60- ....
Satin white	2.00- 2.25
Soda ash, 58 per cent light (bags)	1.38- ....
Starch, papermakers', in bags	3.32- ....
Talc (ton)	17.00-18.00

Survey of Business in Paper

Conditions in the paper industry were reviewed by A. R. Graustein, President of the International Paper Company, in a statement contributed to the Annual Financial and Business Survey of the New York Evening Post, of January 2, 1926. A certain overproduction is responsible, he says, for keeping down prices of paper, though all pulps are in improved position. Chemical pulp has noticeably strengthened, and there appears to be adequate reason for the belief that recent low levels will not soon recur.

"The paper industry in most lines is enjoying a large volume of business, but is profiting from this demand only to a moderate extent. Excess of capacity, though relatively slight, seems to have an undue effect upon the price structure."

New Machinery for 1926

The following pulp and paper mills are reported as expecting to install new machinery in 1926:

California-Oregon Paper Mills, Los Angeles, Cal.
Cascade Paper Company, West Tacoma, Wash.
Chillicothe Paper Company, Chillicothe, Ohio.
Detroit Sulphite Pulp and Paper Co., Detroit, Mich.
Everett Pulp & Paper Co., Everett, Wash.
Fairfield Paper Company, Baltimore, Ohio,
Jaite Company, Jaite, Ohio.
Jessup & Moore Paper Co., Wilmington, Del.
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.
Lewis River Pulp & Paper Co., Alderwood, Wash.
Mead Pulp & Paper Co., Chillicothe, Ohio.
New York & Pennsylvania Co., Johnsonburg, Pa.
W. B. Oglesby Paper Co., Middletown, Ohio.
St. Helens Pulp & Paper Co., St. Helens, Ore.
Warren Manufacturing Co., Milford, N. J.
Watervliet Paper Co., Watervliet, Mich.
Waterway Paper Products Co., Chicago, Illinois.

Sol Ash, well known in the paper stock trade and to paper mills consuming waste paper and other waste materials as manager of the waste paper department of Atterbury Bros., Inc., of 145 Nassau street, New York, has entered business for himself under the firm style of Sol Ash, Inc., with offices at 1440 Broadway, New York, handling all grades of paper-making material, including wood pulp, casein, rags and waste paper. His specialty, as has been in the past, will be waste paper, though it will be his aim to supply every kind of raw material which paper manufacturers require.

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E. B. Eddy Company, Ltd., Hull, Canada

Canadian Kraft Limited, Three Rivers, Canada
Dealers in Wayagamack Kraft Pulp

Howard Smith Paper Mills, Montreal, Quebec
EASTERN AGENTS of Sulphite Pulp. Made by
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Unbleached Sulphite 50 tons daily
Kraft Pulp 50 tons daily

Our pulp is made from Canadian Spruce
We ship in sheets, baled

BATHURST, NEW BRUNSWICK, CANADA

EXPORTS

The upward trend noticeable in paper exports from the United States in September continued during October, the total value of such shipments in October exceeding those during September by 8 per cent, according to statistics issued by the Department of Commerce in Washington. The principal gains occurred in exports of miscellaneous wrapping paper, writing, tissue and crepe papers and wall paper. Somewhat smaller increases also occurred in shiments of book paper, paper board, boxes and cartons, and blotting, carbon and cash register papers.

Compared with the corresponding month in 1924, the value of the paper and board shipments during October showed a decrease of 6 per cent. This decline in value is partly attributable to a decrease in the volume of shipments of a considerable number of the items and partly to a decrease in the average export value of a number of the more important classes, such as newsprint, book paper, wrapping paper, tissue and crepe paper, and boxes and cartons.

Exports of paper base stocks from the United States during October were marked by an increase in the exports of rags and a decrease in exports of sulphite and soda wood pulp as compared with October, 1924, shipments. Exports of wood pulp, other than the two classes mentioned, also exceeded those of the preceding month and of the corresponding month in 1924.

IMPORTS

Wood Pulp

Although having quieted down to some degree as a result of the holiday and inventory season, the market for foreign wood pulp continues very firm. The tendency of quoted prices is upward; offerings are at best limited both as regards number and volume, and a strong feature is that sellers are not pressing buyers in the least. There is every indication wood pulp is due to experience an excellent year in 1926; certainly the new year opens with the situation exhibiting as much or more strength than ever before at the outset of a year. Consumers in recent weeks have been somewhat slow in operating as buyers; most of them have been engaged in compiling inventories and making repairs to mill equipment and have not been in much of a purchasing mood, yet any lots of pulp that have been offered at anything smacking of favorable prices have been quickly absorbed.

Reports tell of a firm situation at primary sources abroad. Swedish producers have sold almost their entire 1926 output of sulphite and kraft, latest estimates showing that more than 90 per cent of the kraft production of Sweden and above 80 per cent of the sulphite output of this year have been put under contract—a good part of which has been sold to American paper and board mills. Indications are there will be no surplus of pulp from any origin on the market during the first half of 1926, and it is quite probable a decided pinch in supply will be felt next fall when consumers come in to cover their last open water shipment requirements and find little or no pulp available in Scandinavia. In fact, should the Baltic close earlier than usual this winter, it is likely a tight market condition will develop before the spring, although shipments of pulp out of Sweden to the United States have been fairly heavy during the past several months. No advices have yet been received of the Baltic closing, though the weather early in the winter has been exceptionally cold in Northern Europe, because of which it is expected navigation will be stopped sooner than ordinarily.

Imports of chemical wood pulp into the United States during October totaled 105,121 tons, showing a gain over the several previous months, imports in September amounting to 99,723 tons, in August to 95,512 tons, and in July to 96,341 tons. October receipts brought the total for the first ten months of 1925 up to 995,242 tons, giving a monthly average of 99,524 tons, contrasted with a monthly average of 92,622 tons in the same period of 1924. Imports of ground wood in October were 29,296 tons, against 22,122 tons in the preceding month, making a total for the first ten months of the year of 235,274 tons, giving a monthly average of 23,527 tons, compared with an average of 17,130 tons monthly in the corresponding time of 1924.

Quotations on bleached sulphite range from about a low point of 4.15 cents per pound ex dock New York upwards for No. 1 grade, some brands being held for 4.50 cents. Strong unbleached sulphite of prime quality is quoted at around 3.10 cents a pound on the dock at New York, easy bleaching sulphite at 3.30 cents upward, and ordinary unbleached Mitscherlich sulphite at 3.05 cents. Standard prime Swedish kraft pulp is quoted at 3.20 cents ex dock New York. Ground wood of Scandinavian origin is priced by importers at around $37 a ton ex dock New York or other American Atlantic ports.

Receipts at the port of New York during December and current market quotations ex dock New York follows:

Bleached sulphite, No. 1	4.15- 4.50
Unbleached sulphite, strong, No. 1	3.10- 3.30
Unbleached sulphite, No. 2	2.85- 3.10
Easy bleaching sulphite	3.30- 3.50
Mitscherlich unbleached, genuine	3.40- 3.60
Mitscherlich unbleached, ordinary	3.00- 3.15
Kraft, standard Swedish	3.15- 3.30
Groundwood, per ton	36.00-3800

Parsons & Whittemore, 236 bls. from Raumo; Bulkley, Dunton & Co., 2,009 bls. from Trieste, 2,700 Iggesund, 3,000 Gefle and 1,300 Hamburg; A. P. W. Paper Co., Albany, 10,164 bls. ground wood from Sheet Harbor, N. S.; M. Gottesman & Co., 1,000 bls. from Sebenico, 2,400 Rotterdam, and 2,875 Sundsvall; French-American Banking Co., 850 bls. from Rotterdam; Tidewater Paper Mills Co., 24,256 bls. ground wood from Liverpool, N. S.; Johaneson, Wales & Sparre, 4,200 bls. from Hernosand and 1,442 Gothenburg; Scandinavian Pulp Agency, 780 bls. from Skutskar and 635 Gothenburg; Pagel, Horton & Co., 2,000 bls. from Skutskar and 5,000 Gefle; Robert Gair Co., 5,330 bls. and 340 half bales from Bridgewater, N. S.; Chemical National Bank, 300 bls. from Oslo; Central Union Trust Co., 200 bls. from Oslo and 3,200 Sarpsborg; Borregaard Co., 300 bls. from Oslo; Castle & Overton, 570 bls. from Rotterdam and 820 Hamburg; Mead, Patton & Co., 14,797 bls. ground wood from Botwood, N. F.; Chase National Bank, 598 bls. from Gothenburg; E. M. Sergeant Co., 525 bls. from Gothenburg, and 2,100 Hernosand; Lagerloef Trading Co., 1,041 bls. from Kotka, and 621 Hamburg; W. Hartmann & Co., 625 bls. from Hamburg; J. Andersen & Co., 1,905 bls. from Sarpsborg; Order, 1,635 bls. from Raumo, 4,986 Koenigsberg, 500 Gefle, 6,709 Hamburg, 898 Helsingfors, 1,916 Kotka, and 1,945 Wiborg.

Paper Stock

Judging from arrivals at the port of New York, imports of rags, bagging, old rope and other papermaking materials were smaller in December than in any month in a long time. The falling off of receipts reflected the quiet market prevail-

MITTS & MERRILL SHEET STOCK SHREDDER

Giving the Beater a Lift

The operation of a beater, with its wear and tear and tremendous power consumption, has one primary purpose, namely, hydration. Any thing that will economically bring about hydration more quickly relieves the beater just that much, cuts down on operating costs and speeds the process of paper making.

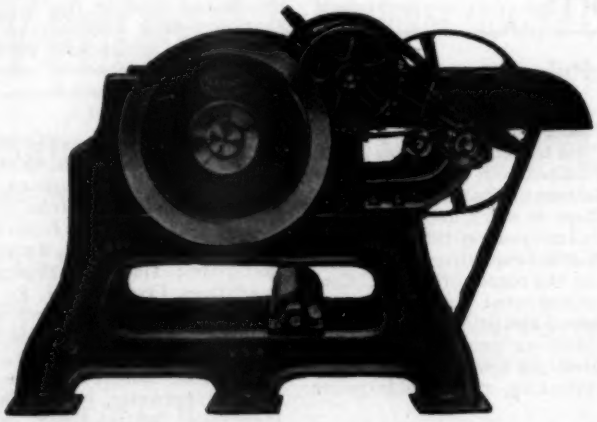
The MITTS & MERRILL SHEET & LAP STOCK SHREDDER performs on magazines, books, old paper and boxboard, frozen or dried pulp laps in such a way as to greatly reduce their resistance to hydration when they reach the beater. It gives the beater an economical lift.

Our Shredders are built in sizes with spouts ranging from 18″ to 45″ wide. We will be glad to quote you on any size adapted to your requirements.

We also build a 100% efficient "Hog" to reduce pulp mill bark and wood refuse

See pages 378 and 379 in the Paper and Pulp Mill Catalogue

MITTS & MERRILL 1013 Tilden St. **SAGINAW, MICH.**



RAG CUTTERS

Whatever You Cut, a GIANT Will Solve Your Problem

LET US FIGURE IT OUT FOR YOU

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WATEROUS ENGINE WORKS
Brantford, Ont., Canada
Canadian Representatives

R. J. MARX
133 Finsbury Pavement, London E. C.
Sole Agents for Europe

ing for such goods and the consequent curtailed buying abroad by dealers and importers. Rag imports were much lighter than in months, while old rope arrivals were unusually small, as were miscellaneous paper stock. Old bagging imports were up to at least normal.

Imports of all kinds of papermaking material through the port of New York in December, with names of consignees, compiled from manifests of steamers reaching that port during the month, were as follows:

Old Rope

Brown Bros. & Co., 451 bls. and 690 coils; William Steck & Co., 63 bls.; Union Trust Co. of Cleveland, 82 coils; Ellerman's Wilson Line, 418 coils; Irving Bank-Columbia Trust Co., 133 coils; Darmstadt, Scott & Courtney, 42 coils and 37 bls.; National Bank of Commerce, 51 coils; S. Birkenstein & Sons, 139 coils; National City Bank, 114 bls.; R. F. Downing & Co., 18 bls.; Jaffe Products Co., 34 bls.; British Bank of South America, 95 coils; Order, 100 bls. and 100 coils.

Old Bagging

National City Bank, 133 bls.; State Bank, 1,200 bls.; Whitney Central National Bank of New Orleans, 1,200 bls.; Stone Bros. Co., 38 bls.; Equitable Trust Co., 32 bls.; Mechanics & Metals National Bank, 709 bls.; Brown Bros. & Co., 209 bls.; Amsinck, Sonne & Co., 91 bls.; Anglo-South American Trust Co., 56 bls.; Maurice O'Meara Co., 276 bls.; S. Birkenstein & Sons, 70 bls.; National Bank of Commerce, 449 bls.; W. Schall & Co., 119 bls.; Castle & Overton, 66 bls.; Bank of New York & Trust Co., 84 bls.; Jaffe Products Co., 11 bls.; Second National Bank of Boston, 71 bls.; L. H. Abenheimer, 61 bls.; Salomon Bros. & Co., 40 bls.; Atterbury & McKelvey, 187 bls.; Merchant's National Bank, 64 bls.; Union National Bank of Philadelphia, 142 bls.; Grace National Bank, 108 bls.; E. J. Keller Co., 1,264 bls.; Order, 763 bls.

Rags

Stone Bros. Co., 727 bls.; H. Muehlstein & Co., 491 bls.; Victor Galaup, Inc., 255 bls.; Albion Trading Co., 44 bls.; Maurice O'Meara Co., 290 bls.; Atterbury Bros., 96 bls.; Lavin & Rosenberg, 75 bls.; Atlas Waste Mfg. Co., 202 bls.; I. Hinerfeld, 11 bls.; A. Grifoni, 580 bls.; Castle & Overton, 863 bls.; Darmstadt, Scott & Courtney, 138 bls.; American Wool Stock Co., 216 bls.; Daniel M. Hicks, Inc., 159 bls.; Rudolf Wolf, 23 bls.; S. Birkenstein & Sons, 76 bls.; J. J. Patricof, 118 bls.; S. Silberman & Co., 57 bls.; L. H. Abenheimer, 88 bls.; S. Schapiro & Sons, 31 bls.; Paul Berlowitz, 37 bls.; Robert Blank, 6 bls.; Franklin Paper Stock Co., 6 bls.; Daniel I. Murphy, Inc., 68 bls.; E. J. Keller Co., 3,969 bls.; Chase National Bank, 34 bls.; Bank of New York & Trust Co., 380 bls.; State Bank, 8 bls.; Mechanics & Metals National Bank, 1,061 bls.; Central National Bank of Cleveland, 271 bls.; National Bank of Commerce, 83 bls.; Equitable Trust Co., 222 bls.; Anglo-South American Trust Co., 314 bls.; National City Bank, 142 bls.; Chemical National Bank, 121 bls.; Kidder-Peabody Acceptance Corp., 50 bls.; Union National Bank of Philadelphia, 90 bls.; American Exchange Pacific National Bank, 10 bls.; Philadelphia, National Bank, 70 bls.; Bankers Trust Co., 20 bls.; Cleveland Trust Co., 47 bls.; A. W. Fenton, Inc., 1,818 bls.; Brown Bros. & Co., 463 bls.; W. Schall & Co., 604 bls.; R. F. Downing & Co., 46 bls.; Goschens & Cunliffe, 32 bls.; Goldman, Sachs & Co., 187 bls.; C. R. Spence & Co., 326 bls.; Amsinck, Sonne & Co., 23 bls.; J. B. Moors & Co., 272 bls.; The Barrett Co., 1,271 bls.; Murray Freighting Co., 34 bls.; C. Barnett Co., 335 bls.; Seaboard National Bank, 53 bls.; American Express Co., 29 bls.; Garfield National Bank, 188 bls.; Central National Bank of Savings & Trust Co., 190 bls.; Guaranty Trust Co., 77 bls.; R. Ingram, 63 bls.; Order, 2,852 bls.

Miscellaneous Paper Stock

Anglo-South American Trust Co., 223 bls.; Milton Snedeker Corp., 168 bls.; Seaboard National Bank, 206 bls.; National Bank of Commerce, 36 bls.; Darmstadt, Scott & Courtney, 15 bls.; Salomon Bros. & Co., 106 bls.; Mechanics & Metals National Bank, 29 bls.; Whaling Waste Products Co., 46 bls.;

Starch

ECONOMY can never be mistaken for cheapness. In the matter of sizing material, starch is cheaper than an all-glue size, yet the results are identical—in fact, the paper made with starch sizing is stronger.

FOX HEAD NIAGARA
SPECIAL PAPER

Our experts can show you how these starches can be used advantageously in your mill. They will gladly call on request.

Corn Products Refining Company
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Starch

Dependable Rosin

ONE of the principal reasons Hercules Wood Rosin has grown so rapidly in popularity is its dependability. Chemical and physical control at every step make it possible to assure customers of its high efficiency as a paper size. Write us for information.

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"MICHIGAN" Combination Steel and Wood Pipe

LONG DISTANCE CONVEYOR OF WATER AND PAPER STOCK IN PAPER AND PULP MILLS—Specially Adapted to Carry Sulphite, Ground Wood and "White Water"

Eighteen reasons why you should use "Michigan" combination steel and wood pipe

1—Durability of Wood Shell. 2—Sanitary. 3—20% more capacity than Cast Iron Pipe. 4—Simplicity in handling. 5—Light in weight. 6—Speed in laying. 7—Protects against freezing. 8—Not affected by Electrolysis. 9—Rigid inspection of materials. 10—Efficient construction of stave. 11—Strength of steel banding. 12—Protection of banding with asphalt coating. 13—Cannot burst under pressure. 14—Can be laid in a wet trench. 15—Short curves without specials. 16—Low installation and maintenance cost. 17—Responsibility of company. 18—Not affected by sulphur or chemical solutions.

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"Steel for Strength—Wood for Durability"

Technical Association Papers, Series VIII (1925)

In paper, 248 pages. $3 per copy; $1.50 to members of TAPPI

CHEMICAL PULP
Chemistry in the Soda Pulp Process
Economy of Lime Reburning
Evaporator Test Code for Soda Mills
Preliminary Impregnation of Wood
Strength Test for Chemical Pulp
Sulphite Waste Liquor as Fuel
Use of Decayed Wood for Bleached Chemical Pulp

MECHANICAL OPERATION
Alexander Electric Paper Drier
Burning of Wood Refuse
Moisture Meter and Its Use in Water Removal
Ruths' Steam Accumulator
Steam Prime Movers for Paper Mills
Ventilation of Paper Machine Rooms

MECHANICAL PULP
Norton's Segmental Pulpstone
Refiners for Groundwood Tailings

PAPER TESTING
Bureau of Standards and the Weller Brittleness Test
Extractor and Cleaner for Carbon Paper
Pulp Weight Factors for Microscopical Analysis
Relation of Paper Furnish to Paper Tests
Stains for Microscopical Analysis
Study of the Mullen Tester
Test for the Liquid Permeability of Paper
Tests at Various Relative Humidities
Use of the Glarimeter for Paper Finish

WASTE
Burning of Wood Refuse
Economy of Lime Reburning
Uses of Carbon Recovered from Black Ash
White Water and Stream Pollution
White Water Utilization Code

MISCELLANEOUS
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Bibliography of Paper Making for 1924
Effect of Acetic Acid on Animal Glue
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Standard Method for Testing Rags
Testing Aniline Dyes
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Write to THE PAPER INDUSTRY, 356 Monadnock Bldg., Chicago, Ill.

Swenson Reclaiming Machinery *for Soda and Sulphate Mills*

SWENSON EVAPORATOR CO.
[Subsidiary of Whiting Corporation]
Main Office and Works: Harvey, Ill., [Chicago Suburb]
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Our Experiment Station at Ann Arbor
is equipped to make tests, on a commercial scale [under the direction of Prof. W. L. Badger] on problems involving evaporation, crystallization, heat transfer, etc., at a moderate charge.

Equitable Trust Co., 75 bls.; Bank of New York & Trust Co., 137 bls.; Order, 712 bls.

Paper

Importations of paper into the United States during December were of routine character and of near normal volume, judging from the receipts through the port of New York. Receipts of printing paper were somewhat of smaller tonnage, and probably less than usual amounts of wrapping paper were imported. There were fair-sized lots of cigarette, hanging, filter and photo paper imported.

Paper imports of all classes through the port of New York in December follow, these data being taken from the manifests of vessels arriving at that port during the month:

Printing

Keuffel & Esser Co., 189 rolls from Hamburg; E. Dietzgen & Co., 36 cs. from Hamburg; B. F. Drakenfeld & Co., 45 cs. from Liverpool; Perry, Ryer & Co., 211 cs. from Glasgow; P. C. Zuhlke, 54 cs. from Antwerp; P. Puttmann, 32 cs. from Antwerp; Titan Shipping Co., 6 cs. from Southampton; Irving Bank-Columbia Trust Co., 543 rolls from Hamburg; Leonhardt & Brush, 121 rolls and 47 cs. from Hamburg; Oxford University Press, 14 cs. from Liverpool; Norwegian Paper Mills, 543 rolls from Oslo; C. Steiner, 8 cs. from Rotterdam; W. Hartmann & Co., 84 rolls from Rotterdam; New York Times, 2,914 rolls from Corner Brook, N. F., and 3,971 rolls from Botwood, N. F.; New York Call, 328 rolls from Corner Brook, N. F.; H. Reeve Angel & Co., 446 cs. and 603 reels from Kotka; Parsons & Whittemore, 633 reels from Kotka; Perkins-Goodwin Co., 7 rolls from Trieste; A. Price & Son, 54 cs. from Antwerp; Order, 32 cs. from Bremen, 6 bls. London, 17 bls. Hamburg and 325 reels Wiborg.

Wrapping

International Forwarding Co., 140 cs. from Hamburg; E. Dietzgen & Co., 8 cs. from Rotterdam; F. C. Strype, 4 rolls and 11 cs. from Antwerp and 10 cs. from Rotterdam; Maurice O'Meara Co., 22 bls. from Hamburg; W. Hartmann & Co., 5 bls. from Hamburg; F. L. Kraemer & Co., 10 bls. from Hamburg; Guaranty Trust Co., 81 rolls from Hamburg; Irving Bank-Columbia Trust Co., 12 cs. from Hamburg and 37 rolls from Antwerp; Steffen, Jones & Co., 12 cs. from Rotterdam; C. Steiner, 5 cs. from Hamburg; Borregaard Co., 100 bls. from Gothenburg; C. K. MacAlpine & Co., 1,174 reels and 2 bls. from Gothenburg; Wilkinson Bros. & Co., 348 rolls and 38 bls. from Gothenburg; Arkell Safety Bag Co., 340 rolls from Gothenburg; Blauvelt-Wiley Paper Mfg. Co., 107 bls. from Glasgow; Robert Cushman & Co., 3 cs. from Genoa and 12 cs. from Leith; Stoehrs & Sons, 12 bls. from Hamburg; DeNobli Cigar Co., 43 bls. from Genoa; Order, 6 bls. from London, 3 cs. Rotterdam and 4 pkgs. Antwerp.

Cigarette

M. Spiegel & Sons, 14 cs. from Hamburg; P. J. Schweitzer, 37 cs. from Havre and 100 cs. from Marseilles; Standard Products Corp., 414 cs. from Havre; American Tobacco Co., 1,450 cs. from Bordeaux; DeManduit Paper Corp., 702 cs. from St. Nazaire; Hensel, Bruckman & Lorbacher, 31 cs. from Hamburg; F. P. Gaskell & Co., 20 cs. from Havre; American Express Co., 750 cs. from Bordeaux; Order, 3 cs from Havre and 202 cs. from Marseilles.

Writing

Guibont Freres & Co., 17 cs. from Havre and 3 cs. from Southampton; Marcus Ward, Inc., 6 cs. from Glasgow; Sternberg & Co., 10 cs. from Marseilles.

Drawing

Keuffel & Esser Co., 37 cs. from Hamburg, 3 cs. London and 11 cs. Southampton; H. Reeve Angel & Co., 7 cs. from London; Favor, Ruhl & Co., 3 cs. from London; Devoe & Raynolds Co., 5 cs. from London; Globe Shipping Co., 18 cs. from Bremen.

Filter

H. Reeve Angel & Co., 29 cs. from London and 19 cs. Southampton; J. Manheimer, 180 bls. from Southampton; Zinkeisen

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Cut down *excessive* wrapping paper investment. Why carry two wrapping paper lines for one wrapping paper *purpose?*

MOSINEE

presents a perfect wrapping paper, weight and strength for each wrapping purpose. Made in all weights from 15 pounds to 100 pounds basis. The one complete, standardized and economical line of wrapping paper sold.

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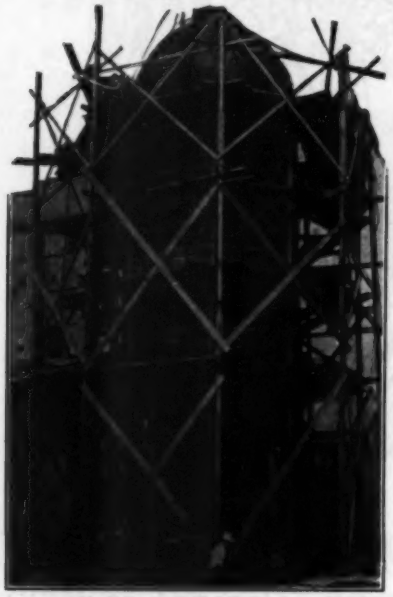
"The Wrapper that Delivers the Goods"

The Production Barometer!



Get the fullest measure of production from your equipment. If it is fit it will set the pace—it will be your production barometer.

Long have Manitowoc Incinerators, Rotary Bleaching Boilers, Digesters, Diffuser Tanks, Barking Drums, Refiners, Globe Rotary Digesters, Blow Pipes, etc., been economically serving mills. They will keep your production up.

All Manitowoc equipment is built up to a high standard, designed and constructed to meet the exacting conditions of the mill.

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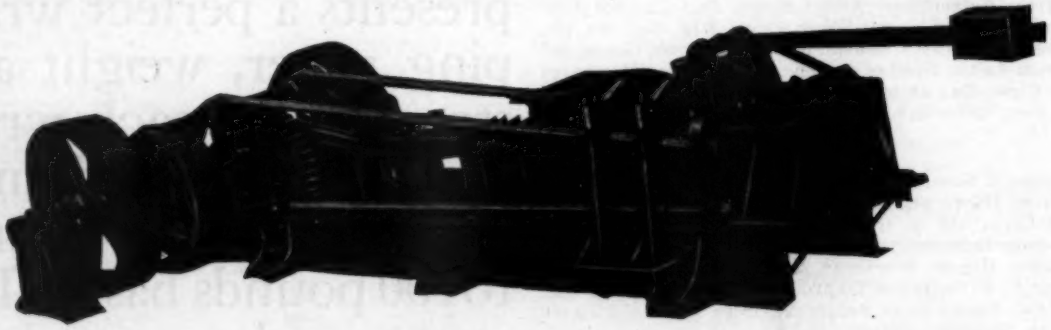
Repeat Orders Prove Success of the



Improved

GIANT NEKOOSA BARK PRESS

Prepares Bark for Fuel 52 Per Cent Dry

NEKOOSA MOTOR & MACHINE CO., Nekoosa, Wis.

& Co., 3 cs. from Hamburg; F. Bing, Inc., 20 bls. from Hamburg.

Tissue

F. C. Strype, 12 cs. from Liverpool; Iwai & Co., 40 cs. from Kobe; J. B. Mast & Co., 3 cs. from Genoa.

Photo

Phoenix Shipping Co., 9 cs. from Hamburg; P. C. Zuhlke, 225 cs. from Antwerp; Gevaert Co. of America, 53 cs. from Antwerp; Globe Shipping Co., 124 cs. from Bremen; P. Puttman, 51 cs. from Antwerp; Draeger Shipping Co., 5 cs. from Gothenburg; Order, 28 cs. from Antwerp.

Hanging

F. J. Emmerich & Co., 44 bls. from London, 70 bls. Hamburg and 38 bls. Liverpool; Bendix Paper Co., 16 cs. from Hamburg; C. A. Haynes & Co., 37 bls. from London and 22 bls. Liverpool; A. C. Dodman, Jr., & Co., 199 bls. from Liverpool, 67 bls. Southampton and 64 cs. Antwerp; F. & R. Trading Co., 742 bls. from Antwerp; Universal Car Loading Co., 8 bls. from Hamburg; G. I. Hunken & Co., 45 cs. from Hamburg; W. H. S. Lloyd & Co., 13 bls. from Liverpool; R. F. Downing & Co., 43 pkgs. from London; Panama Pacific Line, 12 pkgs. from London; Continental & Commercial National Bank, 11 bls. from Hamburg; F. A. Binder, 3 bls. from Bremen; Order, 176 rolls from Bremen.

Board

Metropolitan Import & Mfg. Co., 13 cs. from Bremen; Globe Shipping Co., 15 cs. from Bremen; Schiffenhaus Bros., 53 rolls from Rotterdam; Adrian Vuyck, 943 rolls from Rotterdam; G. Bourjois & Co., 9 cs. from Havre; Baldwin Universal Co., 10 cs. from Liverpool; O. M. Baxter, Inc., 38 cs. from Gothenburg.

Miscellaneous

H. D. Catty Co., 3 cs. from Hamburg; W. J. Byrnes & Co., 9 cs. from Hamburg; E. Dietzgen & Co., 47 cs. from Hamburg; P. H. Petry & Co., 20 cs. from Hamburg, 34 pkgs. Havre and 21 cs. Rotterdam; H. Reeve Angel & Co., 2 cs. from London and 4 cs. Yokahoma; General Electric Co., 20 cs. from Genoa; Borden & Riley Paper Co., 8 cs. from Antwerp; Louis DeJonge Co., 63 cs. from Antwerp; International Forwarding Co., 8 cs. and 12 rolls from Rotterdam; Japan Paper Co., 6 cs. from Rotterdam and 2 cs. Havre; F. C. Strype, 13 cs. from Southampton; Baldwin Universal Co., 11 bls. from London and 50 cs. Hamburg; R. F. Downing & Co., 7 cs. from Havre; First National Bank, 26 cs. from Hamburg; Rosco Trading Co., 10 bls. from Hamburg; Whiting-Patterson Co., 3 cs. from Southampton; S. Gilbert, 22 cs. from Rotterdam; Bendix Paper Co., 10 cs. from Rotterdam; Heemsoth, Basse & Co., 61 pkgs. from Rotterdam; Globe Shipping Co., 5 cs. from Rotterdam; Beekman Card & Paper Co., 3 cs. from Rotterdam; Standard Underground Cable Co., 3 cs. from Rotterdam; Hensel, Bruckman & Lorbacher, 8 cs. from Havre and 4 cs. Hamburg; Titan Shipping Co., 29 cs. from Southampton; C. H. Powell & Co., 5 pkgs. from Havre; Kaufmann-Strauss Co., 8 cs. from Havre; Judson Freight Forwarding Co., 3 cs. from Havre; Charles W. Williams & Co., 5 cs. from Antwerp.

Favorable Decisions Result of Import Committee Work

The successful work of the Import Committee of the American Paper Industry in combating unfair competition from abroad is evidenced in a series of decisions recently handed down by the Board of General Appraisers, the Customss Trial Court.

Decisions handed down included the following:

Stereotype Matrix—Swiss importations found to be undervalued, and valuation increased about 20 per cent.

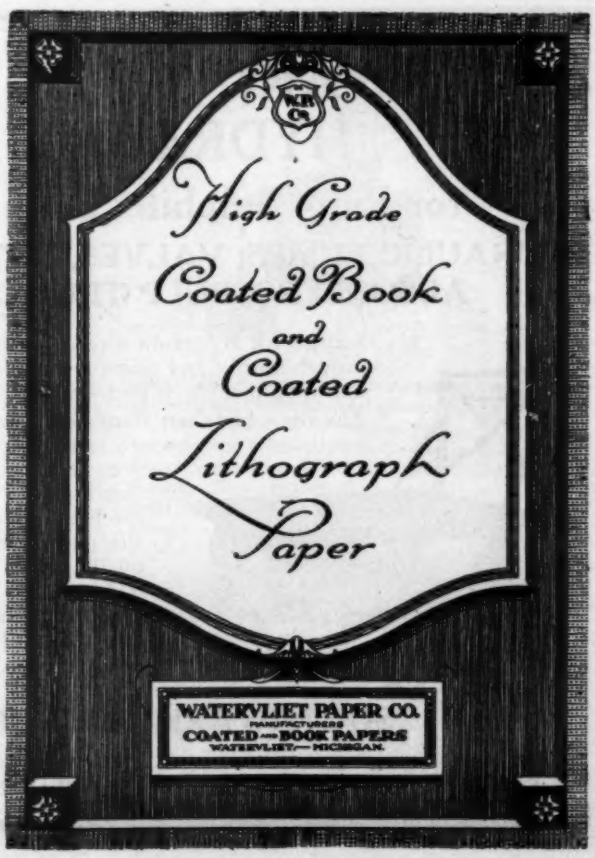
Surface Coated Paper—Importation of high priced coated paper found to be undervalued. Valuation of $15 per thousand sheets increased to $30.90 or over 100 per cent.

Photographic Papers—Valuation increased in one shipment, and remission of penalty denied; another shipment

Hungerford Filters
for
Clear Water

Hungerford Softening Filters
for
Soft Water

Hungerford & Terry, Inc.
Clayton, N. J.



IMPROVED BADGER BLACK LIQUOR EVAPORATORS

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NON-FOAMING

MAXIMUM
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NO ENTRAINMENT

SODA and
SULPHATE
PROCESSES

E. B. BADGER & SONS CO., Boston, U. S. A.

See page 316 in the 1925 Paper and Pulp Mill Catalogue

SOUTHWARK HYDRAULIC PRESSES

for Pulp, Sulphite, Baling, Etc.

HYDRAULIC PUMPS, VALVES, FITTINGS, SHOCK ABSORBERS, PULP TRUCKS, ETC.

Southwark Pulp Truck, for Use with Presses Shown at the Right. Saves Time and Labor

Southwark Hydraulic Presses for dehydrating pulp have proven sturdy and efficient machines in every one of the many pulp mills where we have installed them.

The right hand cut shows an installation of four 600-ton Southwark Presses in a large pulp and paper mill. These presses are designed for use with Southwark Pulp Trucks, the trucks are loaded and run under the press, the pulp being compressed directly on the truck.

This feature gives fast operation, saves labor and eliminates curbs, boxes or other containers on the press.

Four 600-Ton Southwark Pulp Presses, Minnesota & Ontario Paper Co., International Falls, Minn.

SOUTHWARK FOUNDRY AND MACHINE CO.

AKRON, O.
100 E. South St.

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CHICAGO
343 S. Dearborn St.

subjected to 10 per cent additional duty for being improperly marked with country of origin.

The following cases, after an appeal had been taken from decisions of the appraisers, were abandoned without trial by importers, when they realized the strength of the evidence secured by the Import Committee:

Printing Paper—Paper with excessive ash and sizing offered at Cincinnati as standard newsprint, but held dutiable as printing paper.

Writing Paper—Paper with specially finished surface offered at St. Louis as plain writing paper, held dutiable at 10 per cent additional because of special finish.

Printing Paper—Paper with excessive sulphite content offered at New Orleans as standard newsprint duty free. Held by appraiser to be subject to printing paper duty.

Australia's Imports of Newsprint

Reports from Canada state that the British Columbia paper mills are already feeling the effects of the Canadian-Australian trade pact, an order for 20,000 tons of newsprint (vide Times Trade Supplement) having just been placed with them by Australian interests. The immediate cause of this diversion of orders was the strike of seamen in British ports, making delivery under contract impossible. Since the war, Great Britain and the Baltic countries have been getting the bulk of the Australian business, Baltic countries were able to ship to Australia competing with the British exporters, although they paid a duty of s/15 a ton, while the British product entered free. British exporters have still, however, contracts with Australian publishers for some time ahead, but British Columbian mills have now made arrangements to handle whatever Australian business is offering.

Foreign Trade Opportunities

Additional information regarding the following foreign trade opportunities issued by the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce may be obtained from the Bureau in Washington, D. C., or its branch offices. It is requested that the number of the inquiry be given at all times.

No. 18026—Paper bags, dark brown. Genoa, Italy. Agency desired.

No. 18024—Overissued newspapers. Amsterdam, Netherlands. Purchase desired.

No. 18027—Wall paper. Cairo, Egypt. Agency desired.

No. 17985—Wrapping paper. Alexandria, Egypt. Agency desired.

No. 18118—Paper and stationery. Cairo, Egypt. Purchase desired.

No. 18117—Roofing paper. Hanover, Germany. Purchase desired.

No. 18244—Bookbinding materials, cardboard, and paper of all kinds and colors. San Salvador, Salvador. Sole agency desired.

No. 18242—Fiber sheets, tubes, and rods, vulcanized. Hamburg, Germany. Purchase and agency desired.

No. 18243—Wrapping paper. Valparaiso, Chile. Agency desired.

No. 18258—Waxed paper. Colon, Panama. Purchase desired.

No. 18528—Machinery for paper and paperboard manufacturing. Milan, Italy. Purchase desired.

No. 18459—Newsprint paper. Beirut, Syria. Agency desired.

No. 18472—Newsprint paper, 50 to 100 bales. Puerto Montt, Chile. Purchase desired.

No. 18526—Newsprint paper, glazed and unglazed. Paris, France. Agency desired.

No. 18451—Equipment for papermaking from bagasse. Lourenco Marques, Portuguese East Africa. Purchase desired.

No. 18484—Stationery. Chatelet, Belgium. Agency desired.

No. 18479—Wall paper. Cairo, Egypt. Purchase desired.

He knew what he wanted

Fig. 370
Screwed Jenkins Standard Bronze Gate Valve

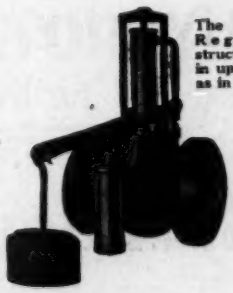
"We standardize on Jenkins Bros. Valves," said the engineer of a large manufacturing plant recently—a plant in which genuine Jenkins Valves have been in service over 20 years.

He knew the importance of the Jenkins "Diamond" and signature in identifying a valve made by the original makers. He knew the reliable year-in and year-out performance that only "Diamond"-marked valves give.

He knew what he wanted—nothing would serve but Jenkins. Make sure you GET the genuine, it pays.

JENKINS BROS.
80 White Street.....New York, N. Y.
524 Atlantic Avenue.....Boston, Mass.
133 N. Seventh Street..Philadelphia, Pa.
646 Washington Blvd.....Chicago, Ill.
JENKINS BROS., Limited
Montreal, Canada London, England

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864



The Davis Pressure Regulator is constructed so as to save in upkeep cost as well as in the cost of steam

IS THERE a process, an auxiliary, or a heating system in your plant that is getting more than its share of steam—that is, operating at boiler pressure when a much lower pressure would do this work? A Davis Pressure Regulator can be set to deliver exactly the right amount of steam for any given service—automatically and without regard to high pressure fluctuations. It saves steam.

G. M. DAVIS REGULATOR CO.
414 Milwaukee Avenue Chicago, Illinois

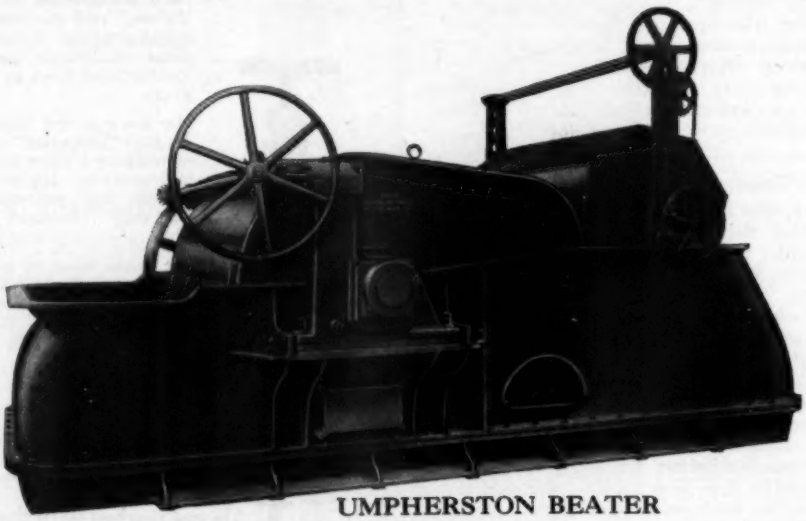
DAVIS VALVE
STEAM-SAVERS SINCE 1875
SPECIALTIES

VALVE MAKERS FOR OVER FIFTY YEARS

PII-B-RTG

Holyoke Machine Co., Holyoke, Mass.

Makers of Improved Machinery for Wood Pulp and Paper Mills



UMPHERSTON BEATER

Washing and Beating Engines, Wood Pulp Grinders, Barkers, Chippers, Rag and Paper Dusters, Rag Cutters, Hydraulic Pumps and Presses, Hercules Water Wheels and Governors, Super-Calenders, Platers, Cotton and Paper Rolls.

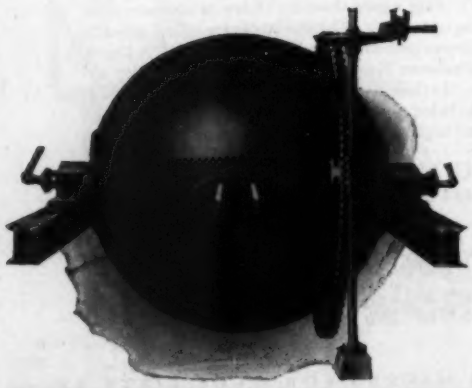
The Biggs Boiler Works Co. Akron Ohio Est. 1868

GLOBE and CYLINDER

ROTARY BLEACHING BOILERS

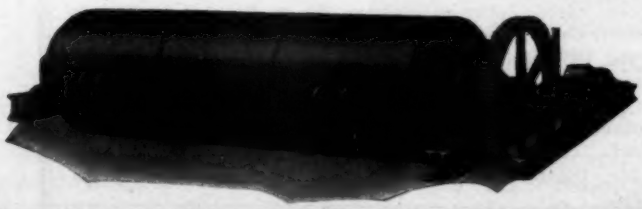
for Years of Dependable Cooking and Bleaching

Why They Come Back



WHEN the buyer of an expensive piece of equipment like a globe or cylinder rotary bleaching boiler comes back to Biggs for more of the same, you can make a good guess as to the service rendered by the initial or previous installations.

And, they have been coming back for the past 38 years. That's proof!

THE BIGGS BOILER WORKS COMPANY

Seneca Place and Case Ave. Akron, Ohio